

**Postgraduate Design Management Education in China:
An Investigation into the Transferability of
Design Management Knowledge, Curricula, Teaching and
Learning Strategies from the UK to China**

JIAN YE DENG

**Faculty of Arts, Media and Design
Staffordshire University**

**Submitted in Partial Fulfilment of Requirement of the Degree of
Doctor of Philosophy**

October 2011

ACKNOWLEDGMENTS

This thesis is the result of five years of research in which I have been supported by many people.

First and foremost, I would like to express my special gratitude to my principle supervisor Dr. David Hands for his ongoing guidance and support. His suggestions were greatly helpful in the preparation of this thesis. I would like to thank my second supervisor Dr. Geoffrey Walton, who gave generously of his comments and encouragement. His recommendations have always been constructive. Great thanks for both of them for giving their time to read through various drafts of this thesis.

I would like to offer my sincere gratitude to everyone who participated in the study. Thanks must also go to Liz MacLarty, Dr. Robert Jerrard, Dr. Qian Sun, Professor Alison Rieple, Jonathan Vickery, Professor Lei Sun and Professor Guoyu Liu for their enthusiasm and insight and who gave readily of their time to make this project a reality. Special thank goes to SUAD, for the constant support.

I would also like to thank my thesis review committee of examiners: Dr. Bill Hollions and Dr. David Heap, for their thoughtful comments; administrative officer Linda Eyre, for her support of processing this thesis.

Lastly, I would like to thank my family. My husband Markus Klingelfuss for his enormous support and love, his encouragement throughout the thesis, and effort & inspiration he has made at each stage; my sons Jonathan and Samuel, for their incredible moral support and patience. Thanks also go to family both in the UK and China, for their love and support.

For the unfailing support afforded by the afore-mentioned, I offer my sincere thanks.

Last, the completion of the thesis is also for my mother Tianyi HE and the memory of my father, Youhua Deng.

ABSTRACT

Design management has not previously been taught in China and the courses are largely ‘imported’ from the west. The transfer of knowledge to a culturally different context must consider a range of aspects which impact upon design management education.

This research study aims to conduct an intensive investigation into the transferability of postgraduate design management education (Pg DME) system and programmes from the UK to China. The key objectives are to identify key issues of design management knowledge and its education in a Chinese context; and understand the impact of findings on the interaction in Chinese social, industrial and educational environments.

The following areas were reviewed to inform the key theoretical context of Pg DME development in China: 1) the essential issues of knowledge transfer; 2) the theory of design and design management; and 3) the strategic content of design management education and its implications. Through the literature review, the themes of the research were finally identified: differences in culture, economic drivers and education systems make the transfer complex, thus requiring interpretation as well as translation in Chinese Pg DME 1) policy making; 2) curriculum development; and 3) teaching & learning strategies.

This research project is based upon an innate belief in the subjective nature of reality from within the interpretive paradigm. Therefore the research is exploratory with an inductive approach. The 3-phased multi-method comparative research study includes a design management 1) education related policy study; 2) curriculum development study; and 3) is comprised of 18 semi-structured qualitative interviews; providing three distinct but comparable data sets, allowing investigation of the research objective from strategic, tactical and operational perspectives. Models have also been developed in this study, where each level has been designated an essential framework for the healthy development of Pg DME in China.

The main findings of the research study highlight Pg DME as an enabling discipline where the needs to be satisfied are internal to the design manager and external to the market and social environment. This necessitates consideration of the appropriate level of understanding of culture background; business & market awareness; and professional practice under the influence of globalisation and knowledge transfer for the society; industries; HEIs; academics and students. It also provides a deeper understanding of cultural aspects of design management provision, enabling the understanding of knowledge transfer, curricula, and teaching & learning across cultural borders.

TABLE OF CONTENTS

Acknowledgements	I
Abstract	II
Table of Contents	III
List of Appendices	XV
List of Figures	XVII
List of Tables	XX
List of Abbreviations	XXII
Publications Arising from the Thesis	XXIV

Section One: Introduction and Overview of the Study

Introduction of Section One.....	1
----------------------------------	---

Chapter 1: Introduction and Overview of the Study

Chapter Introduction.....	1
1.1 Introduction to the Research.....	3
1.1.1 The Research Problem and Rationale.....	3
1.1.1.1 Background to Design Management and DME in the UK.....	4
1.1.1.2 Background to HE and DME in the People’s Republic of China.....	5
1.1.2 Research Questions, Aims and Objectives.....	8
1.1.2.1 Research Questions.....	8
1.1.2.1.1 Challenge One: Cultural Roles in Knowledge Transfer.....	9
1.1.2.1.2 Challenge Two: Building Curricula to Meet Industry Needs.....	10
1.1.2.1.3 Challenge Three: Teaching and Learning Strategies.....	13
1.1.2.2 The Research Aims.....	14
1.1.2.3 The Research Objectives.....	15
2.1 The Research Process and Structure of the Thesis.....	16
2.1.1 Research Process.....	16
2.1.2 The Thesis Structure.....	19

Section Two: Research Context

Introduction to Section Two.....	21
----------------------------------	----

Chapter 2: Knowledge Transfer

Chapter Introduction.....	24
2.1 Knowledge Defined.....	25
2.2 Keys of Knowledge Transfer: Type, embodiment, and transformation.....	25
a, Type.....	26
b, Embodiment.....	26
c, Transformation.....	28
2.3 The Role of Culture on Knowledge Transfer.....	29
2.3.1 Chinese National Culture.....	30
2.3.2 “Reform and Opening” China: Innovation with Chinese Characteristics.....	31
2.4 Chapter Summary.....	35

Chapter 3: Design and Design Management

Chapter Introduction.....	36
3.1 The Development and Definitions of Design Management.....	37
3.1.1 Design to Business Performance.....	37
3.1.2 Definitions of Design Management.....	41
3.1.3 The Essential Characteristics of Design Management.....	43
3.2 Managing Design in Organisational Dynamics.....	47
3.3 Strategic Design Management (Design Leadership).....	51
a, Leadership.....	52
b, The New Strategic Management.....	53
c, Design Leadership.....	55
3.4 Managing Design in Strengthening Cultural Impacts on Innovation, Creativity and Management Style.....	56
3.4.1 Exploring Creativity as a Strategic Business Process.....	57
a, Managing Creativity within Business Context.....	59
b, Organisational Creativity.....	60

3.4.2 Cultural role in Creativity.....	62
3.4.3 Cultural Influences on Management Practices.....	64
a, The Concept of Organisational Culture.....	64
b, Influences of Chinese Culture on Management Practices Comparable to the West.....	66
3.5 Chapter Summary.....	67

Chapter 4: Postgraduate Design Management Education

Chapter Introduction.....	69
4.1 The Role of HE in Economic Growth.....	70
4.2 Paradigm of Pg DME in the New Economy.....	72
4.3 Skills versus Thinking: Skills Development and Learning Outcomes in Pg DME.....	74
4.4 Challenges of Teaching & Learning Strategies in Pg DME.....	78
4.4.1 Learning Styles of Design Management.....	78
4.4.2 Cultural Aspects of Learning Styles.....	80
a, Historical Perspectives on the Cultural Aspects of Learning.....	80
b, A more Critical Stance: Confucianism Critiqued.....	81
c, Learning Context Considerations: Classroom and Academic Culture.....	83
4.5 Chapter Summary.....	84
Summary of Section Two.....	85

Section Three: Research Methodology:

Research Philosophy; Strategies; and Research Design

Introduction to Section Three.....	87
------------------------------------	----

Chapter 5: Research Philosophy; Strategies; and Research Design

Chapter Introduction.....	87
5.1 Research Philosophy and Strategies.....	90
5.1.1 Ontology and Epistemology of the Research Study.....	90
5.1.1.1 Ontology.....	90
5.1.1.2 Epistemology.....	91
5.1.2 Research Strategies.....	93

5.1.2.1 Exploratory Research with an Inductive Approach.....	93
a, Exploratory Research.....	94
b, Inductive Research.....	94
5.1.2.2 Mixed Methods Research Approach.....	95
5.1.3 The Research Process.....	97
5.2 Research Design.....	100
5.2.1 Research Hypothesis.....	101
5.2.2 Literature Review.....	102
5.2.3 Comparative Research Study.....	104
5.2.3.1 The 1 st and 2 nd Phases of the Comparative Research Study.....	105
a, The 1 st Phase of the Comparative Research Study: Comparative study of Pg DME policy making.....	105
b, The 2 nd Phase of the Comparative Research Study: Comparative study of Pg DME curriculum development.....	106
5.2.3.2 The 3 rd Phase of the Comparative Study: Comparative study of Pg DME implication through in-depth interviews both in the UK and China.....	108
5.2.3.2.1 Designing the Questionnaire.....	110
5.2.3.2.2 Pilot Study on Questionnaire Design.....	112
5.2.3.2.3 Sampling.....	114
a, Interviews of Leading Design Management Academics both in the UK and China.....	114
b, Interviews of Design/ Management Individuals in both Public and Private Sectors of China.....	115
5.2.4 Data Collection and Data Analysis.....	116
5.2.4.1 Methods of Data Collection.....	116
5.2.4.2 Methods of Data Analysis.....	118
a, Constant Comparison and Theoretical Sampling Methods.....	118
b, Content Analysis Approach.....	119
5.2.4.3 An Example of the Evaluation of Evidence in Analysing Data: The Interview Data.....	121
a, Understanding the Data.....	122
b, Focusing the Analysis.....	123
c, Data Analysis: Coding.....	123
d, Identifying Patterns.....	124
e, Identifying Consistency and Context.....	124
f, Triangulation.....	124

5.2.5 Reliability and Validity.....	125
5.3 Alternative Methods of the Study.....	127
5.3.1 The Deductive Approach.....	127
5.3.2 Quantitative or Qualitative.....	127
5.3.3 Case Study.....	128
5.3.4 QSR*Nudist.....	129
5.4 Chapter Summary.....	129
Summary of Section Three.....	131

Section Four: 3-Phased Comparative Research Study

Introduction to Section Four.....	133
-----------------------------------	-----

Chapter 6: Higher Education and Design Management Related Policies Study: a comparison between the UK and China (First Findings and Discussions)

Chapter Introduction.....	136
6.1 HE Policy both in the UK and China.....	139
6.1.1 HE Policy in the UK.....	139
6.1.1.1 The UK HE System.....	139
6.1.1.2 Developing HEIs that National Economic Needs Require.....	140
6.1.1.3 HEIs to meet Students' and Employers' Needs: Supporting innovation and entrepreneurship.....	141
6.1.2 HE Policy in China.....	142
6.1.2.1 Chinese HE System.....	143
6.1.2.2 Strategic Development of HE in China.....	144
a, The Ongoing 'Quality Engineering'.....	144
b, Enhance 'Graduates' Employment.....	145
c, The Future Plan: "National Medium and Long-term Educational Reform and Development Planning Proposal".....	146
6.2 Design to meet Economical, Governmental and Industrial Needs both in the UK and China.....	146
6.2.1 Design to meet Economical, Governmental and Industrial Needs in the UK.....	147
6.2.2 Design to meet Economical, Governmental and Industrial Needs in China.....	149

6.3 Summary of Design Management Policy and Education Development both in the UK and China.....	151
6.4 Discussion 1: Developing HE System with Chinese Characteristics.....	152
6.5 Discussion 2: Building up Solid Quality Policy as a Foundation of Chinese HE System.....	153
6.6 Discussion 3: Developing Chinese DME Context to Meet Economical, Governmental and Industrial Needs.....	156
6.7 Conclusions of First Findings.....	160
6.7.1 Strategic Level of Pg DMED.....	160
6.7.2 Framework at the Strategic Level of Pg DMED in China.....	161
a, Government Policy.....	163
b, Postgraduate Design Management Education (Pg DME).....	164
6.8 Chapter Summary.....	165

Chapter 7: Content Analysis of Existing Pg DME Courses in the UK

Chapter Introduction.....	167
7.1 Development of a Current Model in Existing Pg DME Courses in the UK.....	168
7.1.1 Summary of the Course Content of Postgraduate Programmes in Design Management.....	171
7.1.2 Teaching Aims and Objectives, and Course Structures of Postgraduate Programmes in Design Management.....	174
7.1.2.1 Teaching Aims and Objectives of Postgraduate Programmes in Design Management.....	174
7.1.2.2 Design Management from Design Culture: The design and management postgraduate education model in design schools.....	176
7.1.2.3 Design Management from Management Culture: The design and management education model as relevant content of MBA education....	178
7.1.2.4 Crossing the Boundary: Multi-disciplinary Design Management	180
a, Collaborations Between Institutions.....	180
b, Masters Courses.....	181
c, New Courses and Centres in Development.....	181
d, Setting up Research Centres.....	181
7.1.2.5 Course Structure of Postgraduate Programmes in Design Management.....	182
7.1.3 Assessment and Learning Outcomes of Postgraduate Programmes in Design Management.....	183

7.1.4 Teaching and Learning Methods of Postgraduate Programmes in Design Management.....	186
a, Case Study.....	187
b, The Role of Simulation.....	188
c, Cross-project Portfolio Work.....	188
d, Design Audit.....	189
e, Engagement with Business and Employers.....	189
7.2 Summary of Existing Pg DME Courses in the UK:	
The Design Management Curriculum Staircase.....	190
a, Stage 1: Foundation of Knowledge and Techniques of Design Management.....	192
b, Stage 2: Creative Professional Level of Design Management	192
c, Stage 3: Design Management Implementation.....	193
d, Stage 4: Design Management as Culture of Moving Towards	
a Flexible University Model for Multilevel Deliver.....	193
7.3 Chapter Summary.....	194

Chapter 8: Content Analysis of Existing Pg DME Courses in China

Chapter Introduction.....	195
8.1 Current Pg DME Courses in Chinese HEIs.....	196
8.1.1 Course Content and Teaching Aim and Objectives of Postgraduate Programmes in Design Management.....	197
8.1.2 Course Structure of Postgraduate Programmes in Design Management.....	201
8.1.2.1 Discrete or Part of a Framework.....	204
8.1.2.2 Specialist or Multi-disciplinary.....	205
8.1.2.3 Structured or Self-directed.....	206
8.1.3 Teaching Methods and Learning Outcomes of Postgraduate Programmes in Design Management.....	207
8.1.3.1 Learning Outcomes.....	207
8.1.3.2 Issues related to the Teaching Methods.....	208
a, Design Management Practice.....	208
b, Teaching Recourses.....	210
8.2 Summary of Existing Pg DME Courses in China: The Chinese Design Management Curriculum Model.....	211
a, Level 1: Design Management as Project.....	212
b, Level 2: Design Management as Function.....	213
c, Level 3: Design Management as Culture.....	214

8.3 Chapter Summary.....	215
--------------------------	-----

Chapter 9: Comparative Analysis and Findings of Existing Pg DME Courses between the UK and China (Second Findings and Discussions)

Chapter Introduction.....	216
9.1 Discussions of Key Findings of the Existing Pg DME Courses in the UK.....	218
9.1.1 Discussion 1: ‘Multi-disciplinary’ Approach.....	218
9.1.2 Discussion 2: Educating ‘T’ shaped Professionals.....	219
9.1.3 Discussion 3: ‘Problem-based’ Learning.....	221
9.2 Discussions of Key Findings of Existing Pg DME Courses in China.....	223
9.2.1 Discussion 1: Defining the “Design Management Knowledge” Identity.....	223
9.2.2 Discussion 2: Under the Influence of ‘Design Culture’.....	225
9.2.3 Discussion 3: Implementation of Innovation.....	227
a, Enhancing Design Management ‘Soft Skills’.....	228
b, Collaboration between Industries and Academia.....	229
9.2.4 Discussion 4: Setting up a Flexible Model for Course Delivery and Development.....	230
a, MBA Format.....	232
b, Continuing Professional Development (CPD) Format	234
9.2.5 Discussion 5: Teaching and Learning Strategies.....	235
9.2.6 Discussion 6: Meeting Universal Quality and Standards of Curricula.....	236
9.3 Conclusions of Second Findings.....	238
9.3.1 Tactical Level of Pg DMED.....	238
9.3.2 Framework at the Tactical Level of Pg DMED in China.....	239
9.4 Chapter Summary.....	243

Chapter 10: In-depth Interviews of Leading Academics selected both in the UK and China

Chapter Introduction.....	245
10.1 Review of the Questionnaire.....	246

a, Part 1: Broad Context of Design Management: Definition; design management challenges and opportunities; design management versus design leadership. (Q1-3).....	246
b, Part 2: Design Management in the Industry: Design management roles; design versus management. (Q4-6).....	247
c, Part 3: Pg DME to meet Industry needs: Module content; learning outcomes; curriculum design; teaching and learning methods. (Q7-11).....	248
d, Final Part of the Questionnaire (Part 4): Transformation issues from west to east, and its applicability & relevance. (Q12).....	249
10.2 Results of the Interviews.....	250
10.2.1 The Broad Context of Design Management (Q1-3).....	250
10.2.2 The key Issues for Design Management Implementation in both Public and Private Sectors (Q4-6).....	254
10.2.3 The Content which Pg DME Courses Currently Deliver and Skills Developed (Q7-11).....	257
10.2.4 Transformation Issues from West to East and its Applicability & Relevance (Q12).....	261
10.3 Summary of the Interviews of Leading Academics Selected both in the UK and China.....	263
10.4 Chapter Summary.....	264

Chapter 11: A Collection of Primary Data in both Public and Private Sectors in China

Chapter Introduction.....	265
11.1 Review of Industry Perspectives in China.....	266
11.2 Results of the Interviews.....	268
11.2.1 The Broad Context of Design Management (Q1).....	268
11.2.2 The Key Issues for Design Management Implementation in both Public and Private Sectors (Q2-3).....	271
11.2.2.1 To meet Social Needs.....	271
11.2.2.2 To meet the Demands of the Market and Customer/User.....	272
11.2.2.3 Soft Skills.....	273
11.2.2.4 Multi Skills.....	274
11.2.2.5 Support from National Policy.....	276
11.2.3 The View of Key Issues of Pg DME (Q4-6).....	277
11.2.3.1 Skills Development.....	277

11.2.3.2 To meet Social Needs.....	278
11.2.3.3 To solve the Employment Challenge.....	279
11.2.3.4 Teaching and Learning in a Real Life Environment	281
11.3 Summary of the Primary Data Collection both in Public and Private Sectors in China.....	282
11.4 Chapter Summary.....	283

Chapter 12: Comparative Analysis and Findings of In-depth Interviews between the UK and China (Third Findings and Discussions)

Chapter Introduction.....	285
12.1 Discussions of Key Findings of In-depth Interviews of Leading Academics of Design Management both from the UK and China.....	287
12.1.1 Discussion 1: Situating Design Management Knowledge and Education.....	287
12.1.2 Discussion 2: A Strategic and Integrated Approach	288
12.1.3 Discussion 3: Teaching and Learning Strategies.....	288
12.1.4 Discussion 4: Skills.....	289
12.1.5 Discussion 5: Knowledge Transfer from UK to China in terms of Culture Influences.....	290
12.2 Discussions of Key Findings of In-depth Interviews of Public and Private Sectors in China.....	290
12.2.1 Discussion 1: Skills of Design Management Required within the Industries.....	291
a, ‘T’ shaped Design Management Talent.....	291
b, “Innovative” and “Creative” Soft Skills.....	292
12.2.2 Discussion 2: Collaborative Methods of Design Management Required within the Industries.....	293
12.2.3 Discussion 3: Design Management Graduates Employment Requirement in the Industries.....	294
12.3 Conclusions of Third Findings.....	295
12.3.1 Operational Level of Pg DMED.....	295
12.3.2 Framework at the Operational Level of Pg DMED in China.....	296
12.4 Chapter Summary.....	300
Summary of Section Four.....	303

**Section Five: Main Findings, Discussions & Recommendations; and
Conclusions**

Introduction to Section Five.....305

Chapter 13: Main Findings, Discussions and Recommendations

Chapter Introduction.....307

13.1 An Executive Summary on 1st, 2nd, and 3rd Research Findings:
 Develop the Framework of Pg DME in China.....308
 13.1.1 Strategic Level of Pg DMED in China.....309
 13.1.2 Tactical Level of Pg DMED in China.....310
 13.1.3 Operational Level of Pg DMED in China.....313
 13.1.4 Summary.....314
13.2 The Infusion of the Fundamental Keys of Pg DMED in China.....315
 13.2.1 Key 1: Leadership of ‘Design Driven Innovation’.....315
 13.2.2 Key 2: ‘Tacit Knowledge’ and ‘Soft Skills’ of Pg DME.....318
 13.2.3 Key 3: Cultural Impacts on DMKT in China: On the dimensions of social
 culture, management culture, and teaching & learning culture.....322
13.3 Concluding Summary of Key Findings.....325
13.4 Recommendations on the Implementations of Pg DME in China.....329
 13.4.1 Recommendation One: Support for Pg DME at national strategic level.....329
 13.4.2 Recommendation Two: Enhancing understanding of design management
 in public and private sectors.....330
 13.4.3 Recommendation Three: Promoting the support of design management
 in HE sectors.....331
 13.4.4 Recommendation Four: Systemising international standards
 of Pg DME in China.....333
 13.4.5 Recommendation Five: Developing Pg DME via a flexible approach.....334
 13.4.6 Recommendation Six: Considering influences on PG DME curricula from a
 socio-economic environment and design industry development standpoint...336
 13.4.7 Recommendation Seven: Promoting design management research.....337
13.5 Chapter Summary.....338

Chapter 14: Conclusions

Chapter Introduction.....	340
14.1 Summary of the Study.....	341
14.2 Major Findings of the Study.....	345
14.2.1 Q1: How does Chinese postgraduate design management education (Pg DME) deal with the challenges to knowledge transfer; posed by the need to accommodate and embrace cultural issues?.....	345
14.2.2 Q2: What should Chinese design management students learn on postgraduate design management education (Pg DME) programmes in order to meet industry needs?.....	350
a, An Establishment of a Flexible Framework of Pg DME.....	350
b, Leveraging Tacit Knowledge and Soft Skills in Design Management.....	356
c, Infusing ‘Design Driven Innovation’ in Curriculum Design.....	357
14.2.3 Q3: How should the relationship between learning styles and cultural aspects, in terms of postgraduate design management education (Pg DME) in China, be accommodated?	358
a, Teaching and Learning Strategy.....	358
b, Breaking the Stereotype of Learning Style in Chinese Postgraduate Design Management.....	360
14.3 Contribution and Limitations.....	363
14.3.1 Contribution to Knowledge.....	363
14.3.2 Limitations of the Study.....	364
14.4 Opportunities for Further Research.....	365
a, In terms of Research Areas.....	365
b, Methodologically.....	368
14.5 Closing Remarks.....	368

References.....	References-1
------------------------	---------------------

LIST OF APPENDICES

Appendix 1

Key Dates in the Contemporary Development of Higher Education and UK Universities	Appendix 1-1
Summary of the Course Content of Postgraduate Programmes in Design Management, UK	Appendix 1-2
Summary of the Teaching Aims and Objectives of Postgraduate Programmes in Design Management, UK	Appendix 1-3
Summary of the Learning Outcomes of Postgraduate Programmes in Design Management, UK	Appendix 1-4
Summary of the Teaching Methods of Postgraduate Programmes in Design Management, UK	Appendix 1-5
Summary of the Teaching Aim and Objectives in Postgraduate Design Management Courses in China	Appendix 1-6
Summary of the Course Content in Postgraduate Design Management Courses in China	Appendix 1-7
Summary of the Course Structure in Postgraduate Design Management Courses in China	Appendix 1-8
Summary of the Learning Outcomes and Teaching Methods in Postgraduate Design Management Courses in China	Appendix 1-9
MA Study in Engineering in Design Strategy in Kyushu University	Appendix 1-10

Appendix 2

Interview Questionnaire of Leading Academics both in the UK and China	Appendix 2-1
Interviews Questionnaire of Design/ Management Individuals in both Public and Private Sectors in China	Appendix 2-2
The Key Documents of the Higher Education and Design Management Related Policies Study between the UK and China	Appendix 2-3

Appendix 3

Interviews Transcripts of Leading Academics in the UK
.....Appendix 3-1

Interviews Transcripts of Leading Academics in China
.....Appendix 3-2

Interviews Transcripts of Design/ Management Individuals in both Public and
Private Sectors in China
.....Appendix 3-3

Appendix 4

CVs of Leading Academics in the UK
.....Appendix 4-1

LIST OF FIGURES

Figure 1.1 Section One (Chapter 1) Map: Introduction and Overview of the Study	2
Figure 1.2 Research Design, Process of the Research	19
Figure 1.3 Structure of the Thesis	20
Figure 2.1 Section Map: The Research Context	23
Figure 2.2 Chapter Map: Knowledge Transfer	24
Figure 2.3 Generalised Model of Knowledge	29
Figure 2.4 Chapter Map: Design and Design Management	37
Figure 2.5 Added Value in Different Levels of Design	38
Figure 2.6 Linking Design to Business Performance	39
Figure 2.7 ‘Lucerne Design Management Model’ – Dimensions of Design Management in Organisations	50
Figure 2.8 The Components of Creativity	59
Figure 2.9 Chapter Map: Postgraduate Design Management Education (Pg DME)	70
Figure 2.10 Distinct but Interdependent Disciplines	73
Figure 3.1 Section (Chapter 5) Map: Research Methodology: Research Philosophy; Strategies; and Research Design	89
Figure 3.2 Research as an Interactive, Cyclic Learning Journey	98
Figure 3.3 The Research Process and Methods of this Research Study	99

Figure 3.4 Conducting Qualitative Research	120
Figure 4.1 Section Map: The Comparative Research Study	135
Figure 4.2 Chapter Map: Higher Education and Design Management Related Policies Study: A comparison between the UK and China	138
Figure 4.3 Students in Tertiary Education	143
Figure 4.4 Implications of Developing Chinese Postgraduate Design Management Education (Pg DME) Context to Meet the Chinese Policy Demands	162
Figure 4.5 Chapter Map: Content Analysis in Existing Postgraduate Design Management Education (Pg DME) Courses in the UK	168
Figure 4.6 Course Content of Postgraduate Programmes in Design Management, UK	172
Figure 4.7 The Relationship between Teaching Aims and Objectives at Different Levels	175
Figure 4.8 Summary of Course Structures of Postgraduate Programmes in Design Management, UK	182
Figure 4.9 Skills Development and Learning Outcomes of Postgraduate Programmes in Design Management, UK	183
Figure 4.10 The Postgraduate Design Management Curriculum Staircase	191
Figure 4.11 Chapter Map: Content Analysis in Existing Postgraduate Design Management Education (Pg DME) Courses in China	196
Figure 4.12 Course Content of Postgraduate Programmes in Design Management, China	200
Figure 4.13 Strategic Approaches for Determining Course Content	203
Figure 4.14 An Overview of Postgraduate Design Management Curriculum Model in China	212

Figure 4.15 Chapter Map: Comparative Analysis of Findings of Existing Postgraduate Design Management Education (Pg DME) Courses between the UK and China	217
Figure 4.16 UK Postgraduate Design Management Education (Pg DME) Framework Summary	223
Figure 4.17 Archetype of Design Curriculum	226
Figure 4.18 Framework at the Tactical Level of Postgraduate Design Management Educational Development (Pg DMED) in China	242
Figure 4.19 Chapter Map: In-depth Interviews of Leading Academic Individuals selected both in the UK and China	246
Figure 4.20 Chapter Map: A Collection of Primary Data in both Public and Private Sectors in China	266
Figure 4.21 Chapter Map: Analysis and Findings of In-depth Interviews between the UK and China	286
Figure 4.22 Postgraduate Design Management Education (Pg DME) Implementation in China	301
Figure 5.1 Section Map: Main Findings, Discussions & Recommendations, and Conclusions	306
Figure 5.2 Chapter Map: Main Findings; Discussions and Recommendations	308
Figure 5.3 A Model for Creating Postgraduate Design Management Knowledge, Curricula, Teaching and Learning Strategies	328
Figure 5.4 Chapter Map: Conclusions	341
Figure 5.5 Cultural Demands on Design Management Knowledge Transfer (DMKT) in Chinese Postgraduate Design Management Education (Pg DME)	349
Figure 5.6 Postgraduate Design Management Education (Pg DME) Curricula to Meet Industry Needs in China	358
Figure 5.7 'Learning Culture' of Postgraduate Design Management Education (Pg DME) in China	362

LIST OF TABLES

Table 2.1 Styles of Design Management	40
Table 2.2 Terms Used to Describe Levels of Strategy Management and Design Management	45
Table 2.3 Five-step Framework to Incorporating Design Management into the Organisation	49
Table 2.4 Differences between Designers and Managers	54
Table 2.5 A Comparative Approach to Design and Management Concepts	54
Table 2.6 The Abilities and Benefits of Successfully Incorporating Design Leadership into Organisations	56
Table 2.7 Contrasting Western (based on Anglo-American) and Chinese Cultures	66
Table 2.8 The Research Context of Design Management Knowledge Transfer (DMKT) and its Education Development Issues	85
Table 3.1 Major Mixed Methods Design Types	96
Table 3.2 Four Overarching Issue Domains and Highly Relevant Discussion Points for the Research Questionnaire	111
Table 4.1 Summary of Participating Institutions and Programmes in the UK	169
Table 4.2 MBA Innovating and Designing Services Programme in Imperial College London	179
Table 4.3 Teaching and Learning Methods for Different Learning Aims	186
Table 4.4 Summary of the Participating Institutions and Programmes in China	197
Table 4.5 Taxonomy of the Design Management Postgraduate Programmes Discovered during the Review	204
Table 4.6 Question Mapping for the 3 rd Phase of the Comparative Research Study	244

Table 4.7 Key Interviews of the 3 rd Phase of the comparative research Study: Leading Academic Individuals selected both in the UK and China	250
Table 4.8 Emergent Themes of the Broad Context of Design Management from UKIa and CNIa	251
Table 4.9 Emergent Themes of the Key Issues for Design Management Implementation in both Public and Private Sectors from UKIa and CNIa	254
Table 4.10 Emergent Themes of the Content which Postgraduate Design Management Education (Pg DME) Courses Currently Deliver and Skills Developed from UKIa and CNIa	258
Table 4.11 Emergent Themes of Transformation Issues from West to East and its Applicability & Relevance from UKIa and CNIa	261
Table 4.12 Summary of the Emergent Themes of the Results of Interviews of Leading Academics Selected both in the UK and China	263
Table 4.13 Key Interviews of the 3 rd Phase of the comparative research Study: Design/ Management Individuals from both Public and Private Sectors in China	268
Table 4.14 Emergent Themes of the Broad Context of Design Management in both Public and Private Sectors from CNIi	269
Table 4.15 Emergent Themes of the Key Issues for Design Management Implementation in both Public and Private Sectors from CNIi	271
Table 4.16 Emergent Themes of the Key Issues Key Issues of Postgraduate Design Management Education (Pg DME) from CNIi	277
Table 4.17 Summary of the Emergent Themes of the Collection of Primary Data both in Public and Private Sectors in China	282
Table 5.1 Research Questions and Objectives Explored within this Thesis	342

LIST OF ABBREVIATIONS

AHRC	Arts and Humanities Research Council
BCU	Birmingham City University
BDI	Business Development International
BSI	British Standard Institution
CAFA	Central Academy of Fine Arts, Beijing, China
CGLT	The Capital Grants for Learning and Teaching
CIF	The Capital Investment Framework
CPD	Continuing Professional Development
CPC	Communist Party of China
CNAA	Council for National Academic Awards
CQFW	The Credit and Qualifications Framework for Wales
CUMULUS	International Association of Universities and colleges of Art, Design and Media
CSM	Central Saint Martin College of Art and Design
C4D	Centre for Competitive Creative Design
DM	Design Management
DMC	Design Management Curriculum
DME	Design Management Education
DMED	Design Management Education Development
DMKT	Design Management Knowledge Transfer
DMI	Design Management Institute
DMJ	Design Management Journal
ECTS	The European Credit Transfer System
EHEA	The European Higher Education Area
EPSRC	Engineering and Physical Sciences Research Council
FHEQ	Frameworks for Higher Education Qualifications
HE	Higher Education
HECFE	Higher Education Credit Framework for England
HEIs	Higher Education Institutions
HEQC	Higher Education Quality Committee
HESA	Higher Education Statistics Agency
ICOGRADA	International Council of Graphic Design Associations
LICA	Lancaster Institute for the Contemporary Arts

LCC	London College of Communication
METI	Ministry of Economy, Trade and Industry, Japan
MLP	The National Medium- and Long-Term Plan for the Development of Science and Technology (2006-2020)
MOE	Ministry of Education, P.R.C
NCEI	National Centre for Education Information, US
NDRC	Chinese National Development and Reform Commission
NESTA	National Endowment for Science Technology and the Arts
NPD	New Product Development
NUS	National University of Singapore
OEMs	Original Equipment Manufacturers
PBL	Problem-based Learning
PG	Postgraduate
Pg DME	Postgraduate Design Management Education
Pg DMED	Postgraduate Design Management Education Development
QAA	Quality Assurance Agency for Higher Education
QCF	The Qualifications and Credit Framework
RPD	Rapid Product Development
R&D	Research and Development
SHEFC	Scottish Higher Education Funding Council
SME	Small and Medium Enterprises
SUAD	Shandong University of Art and Design
TLM	Teaching and Learning Methods
TLRP	Teaching and Learning Research Programme
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UniSA	University of South Australia is an innovative
UWIC	University of Wales Institute, Cardiff

PUBLICATIONS AND EVENTS ARISING FROM THE THESIS

Ashton. P, Deng J.Y. (2006), An Investigation of the Transferability of Design Management Education from the UK to China, D2B - The 1st International Design Management Symposium: Shanghai 2006.

Ashton. P, Deng J.Y. (2008), An Investigation of the Transferability of Design Management Education from the UK to China, DMI Journal, Vol.3, 2008, Design Management Institute, US.

Deng J.Y. (2004), The Value of Design Management, Journal of Design Art, 2004/04, 44-1, Shandong Sanlian Press, China. [In Chinese]

Deng J.Y. (2004), Positioning Design Manager, Journal of Design Art, 2004/04. 44-1, Shandong Sanlian Press, China. [In Chinese]

Deng J.Y. (2006), A Framework of Design Management Theory, Journal of Design Art, 2004/03, Shandong Sanlian Press, China. [In Chinese]

Deng J.Y. (2007), Design Management Education in the UK, Journal of Off-School Education, Vol 168, 2007/12, Beijing, China. [In Chinese]

Deng J.Y. (2009), Strategic, Operational and Innovative: Design Management in China at the Cutting Edge of the Business Environment, D2B2 Tsinghua International Design Management Symposium, Beijing, China 2009. [In Chinese]

Deng J.Y. (2009), Design Management in China, in Hands, D. (2009), Vision and Values in Design Management, AVA Publishing, SA.

Deng J.Y. (2010), Award Winning Project: Business School of Design, Design Management Workshop, ICOGRADA 2010 Beijing.

Section One:

Introduction and Overview of the Study

Chapter 1

Introduction

This section (Chapter 1) provides an overview of this research study.

It will start by highlighting the background to higher education (HE) and postgraduate design management education (Pg DME) both in the UK and in The People's Republic of China; it will then follow by addressing the challenges and significance of postgraduate design management education development (Pg DMED) in China; leading towards the development of aims and objectives of the study. Theory in knowledge transfer in the area of Pg DME will be outlined. Research questions, aims, objectives will also be summarised to provide guidance to this research study. Finally, the process of the research and structure of the thesis also will be established, in order to provide guidance to the readers.

Therefore, the aims of section one are fivefold:

- To outline the aims, objectives, context and motivation of the research;
- To briefly discuss the origins and overarching questions of the research;
- To provide the theoretical and practical justification of this topic as a distinct field of study;

- To introduce the methodological research design upon which the research is based; and
- To provide a structure for the research.

Figure 1.1 outlines section one: introduction and overview of the study.

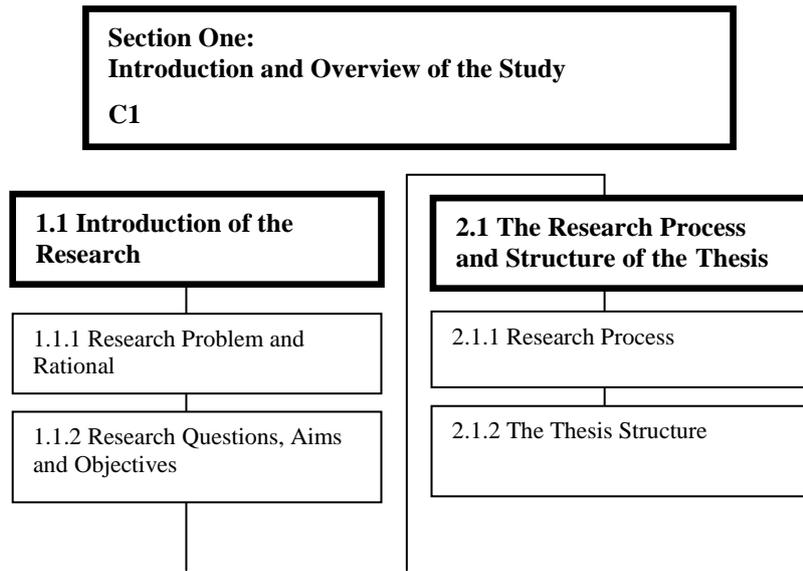


Figure 1.1 Section One (Chapter 1) Map: Introduction and Overview of the Study

Chapter 1:

Introduction and Overview of the Study

1.1 Introduction to the Research

1.1.1 The Research Problem and Rationale

HE systems are in a continual state of transformation. In particular, changes in the socio-economic context caused by the rise and impact of globalisation have inevitably led to changes to the university sector. Alongside these developments, there has also been rapid growth in design management education (DME) in China (TLRP, 2008; Baker, 2007a; Brandenburg and Zhu, 2007; Yin and White, 1994; Kwong, 1996; Mok and Chan, 2001; Zhu, 2000; Li, 2000).

Design management is both a field of professional practice and a research discipline (Friedman, 2004a). Thus, to discuss design management knowledge and its education effectively requires a comprehensive view of all these issues in an integrated understanding (Cooper and Press, 1995; Chung, 1998; Best, 2006; Topalian, 1980a; de Mozota, 2003; Hands, 2009; Cox Review, 2005). However, design management has not been previously taught in China and many of the newly developed courses are ‘imported’ from the west. Differences in culture, education systems and economic drivers make the transfer complex, thus requiring interpretation as well as translation (Sun, 2010; Huang, 2007; Cai, 2009; Liu and Zhan, 2008; Ashton and Deng, 2006; Liu, 2009).

This research study aims to conduct an intensive investigation into the transferability of postgraduate design management knowledge, curricula, and teaching and learning strategies from the UK to China.

1.1.1.1 Background to Design Management and DME in the UK

Design management is the discipline of defining and managing the vision, tasks, and resources required to complete a design project, which oversees the conversion of "vision" into "reality". It is most advanced within the UK and North America and it continues to expand within these regions - both of whom have realised the need for design to be interdisciplinary.

Farr (1966) defined design management as defining and solving a design problem within an agreed budget. In the 1970s, Gorb and other practitioners published articles that focus on design resources at a corporate business level. Throughout the 1980s, design management was supported by the increasing role of design within the development of social, economic, ecological, technological and cultural processes. The benefit of design in the perception of business leaders is increasing; articles and key textbooks have been published in the area of design management arguing that managing design is a key tool for strategic advantage (CNAA, 1984; Cooper and Press, 1995; Bruce and Bessant, 2000; Borja De Mozota, 2003). Design is not just related to its linear areas such as product design, communication design, industrial design, etc. and design management gained more importance *'through the change from a strategy of cost leadership to the strategy of performance leadership'* (Koppelman, 1993:65). Blaich and Blaich (1993:108) argue that *'the implementation of design as a formal programme of activity within a corporation by communicating the relevance of design to long-term corporate goals and coordinating design resources at all levels of corporate activity'*. Design management, while traditionally applied to the management of projects, is now being employed to help organisations manage change, implement new technologies, manage intellectual property, define market requirements, develop brand identity and stimulate business success.

Design management was first taught as teaching design to managers at the London Business School in 1976. Later in the 1980s the programme of design management started in design schools; such as the Royal College of Art, De Montfort, Middlesex, and Staffordshire University, in the UK. Although in the UK many of the courses have not been sustainable, for instance the Westminster MBA course was closed, other courses came through and continue to thrive; for example Brunel, Salford and Lancaster University (DMI, the Design Council UK). Consequently, the UK has one of the most long standing and established systems of DME in the world. As it has matured as an academic discipline, the design management curriculum model became a generic framework for universities to customise in respect of their specific contexts. As a subject, it is usually taught in business and design schools and now refers to more practical, hands-on aspects. For most, DME has twofold objectives: 1) to train partners/ managers and designers. This entails familiarising managers with design and designers with managers; 2) to develop methods of integrating design into the corporate environment (Borja De Mozota, 2003). The teaching model covered topics such as design in an economic and business context, the nature of design work, design and product strategies, design policy making, researching design and product requirements, managing design projects, elements of design work, evaluating design results and legal design. (Best 2006; Borja De Mozota, 2003; CNA 1984; Kyung, 1998).

1.1.1.2 Background to HE and DME in the People's Republic of China

China has undergone several fundamental changes since strategies identified in the 1980s articulated ten deep-seated reforms to be undertaken; in particular, opening further to the outside world and becoming an active participant in international exchange and co-operation (Lianqing 1996; Yin and White, 1994; Kwong, 1996; Mok and Chan, 2001). Since 1978, China has taken these reforms on board and has become a major force in global markets and, in 2006,

Chinese exports were ranked number one in the world (Qian, 2007). Although this strength has been built on a strong manufacturing base, improvements in China's infrastructure, workforce, and regulatory environment are also enabling global companies to lower their costs to reap new competitive advantages. Therefore, the need for a service sector, which can support innovation and new product development quickly, has become evident (Kwong, 1996; Mok, 1996; Yin and White, 1994; Kwong, 1996; Mok and Chan, 2001).

Along with the country's significant development, China's education system has to ensure universities play a key role in China's transition to a knowledge-based society. Significant numbers of universities have restructured in an attempt to improve efficiency and competency in response to the demands of different stakeholders; such as government, business, industry, labour organisations, students and parents (Ashton and Deng, 2006; Brandenburg and Zhu, 2007). China has made a conscious effort, through policy implementation, to invest in HE from spending just 1% of GDP on HE 1998 to 6% in 2007 (Baker, 2007a)).

As a result of this rapid development of economic and educational change, China's DME now faces the challenge of contributing to the knowledge base and management pool to enable technological and economic growth in the country.

Design management as a subject first appeared in China in 2001, as a "Design Management Workshop" through the joint efforts of the Central Academy of Arts, China and the University of New South Wales, Australia. Design management has since become a popular subject, provided by independent academic organisations around the country; such as the Central Academy of Arts, Tsinghua University, Jiaotong University and Dalian Industry University. Moreover, in 2004, The Design Management Research Institute was set up in Shandong through a partnership between Shandong University of Art and

Design and Staffordshire University, UK; and with conferences organised by academic institutions. For example, Tsinghua International Design Management Symposium in Beijing, 2002; D2B - The 1st International Design Management Symposium: Shanghai 2006. D2B2- The 2nd International Design Management Symposium: Tsinghua, Beijing, 2009. Furthermore, Universities and institutes in China started to offer design management courses both at undergraduate and postgraduate level to meet the country's needs. For example, The Central Academy of Arts established its first Postgraduate Certificate Course in 2003 and Shandong University of Art and Design has been running a BA in Design Management from as early as 2002. It has since added an MA to its portfolio from September, 2007.

Design management in China has been described as: providing a new way of communicating to build up a management system (Huangpu, Designer 3M, China); a strategy to plan the future through design (PG Design management, SUAD, 2011); a mechanism which intervenes, organises, mediates and structures in an increasingly more complex enterprise and economic world. In order to implement design management rapidly, Chinese DME establishments have looked to successful courses elsewhere in the world for advice on curriculum content and to support staff new to the area. As design management is a mature subject in the west, Chinese universities strengthened their ties with western partners to promote exchanges. As a result, Chinese DME methods are largely imported from the west. Related courses considered students' level of understanding of professional practice, business and market awareness and design as a strategic tool where the needs to be satisfied are both internal to the designer and external to the market.

1.1.2 Research Questions, Aims and Objectives

1.1.2.1 Research Questions

Although considerable effort has been made to improve knowledge and skills by using traditional western methods of learning and training, the transfer of educational system and programmes to a culturally different context must consider a range of aspects which impact upon the knowledge, curricula and teaching and learning strategies (Cai, 2009; Dunne, 2011; Liu and Zhan, 2008) .

There is already much written about the transfer of management education from west to east (Agarwal and Salunkhe, 2011; Newell 1999; Branine 1996; Littrell 2002), and although this knowledge should inform our study of DME in China, the discipline has additional aspects which may be culturally sensitive. According to Tsang, (1999: 92): *'Importing physical technologies presents some difficulties, but importing social technologies is far more complex and problematic'*. Management behaviour, creativity and design contain major elements of tacit knowledge that can only be transferred with recourse to examples and best practice models. Whilst it is possible – given the successful ‘translation’ of concepts and facts - to transfer explicit knowledge, tacit knowledge is socially constructed and context specific. Furthermore, it is a sum of the experience of the giver and receiver (Nonaka 1994; Newell 1999). This suggests that direct transfer would not be successful and that a study to assess China’s curriculum needs is urgently required. Nevertheless, industry structures and Chinese design management practices must be taken into consideration to produce a curriculum that can support industry needs. Furthermore, education, which aims to prepare graduates for industry, demands that the structure and needs of the employer also be considered.

Therefore, by conducting an extensive literature review, the project aims to identify key issues surrounding the transferability of design management knowledge and practice from a UK to a Chinese context, which focuses on the key theories in knowledge transfer issues; design management theory; and DME and curriculum development / practice. By identifying the following major challenges that Chinese Pg DME is currently facing, the research questions emerged.

1.1.2.1.1 Challenge One: Cultural Roles in Knowledge Transfer

It could be argued that we tend to attribute creativity as an ‘essential’ characteristic in the design management field. This raises an interesting issue as to whether such capabilities lie within the analysis of the problem, the synthesis of ideas or in the articulation of the solution (Parkinson, 1999). However, culture is a body of learned behaviours and acts like a template for that society. Best practice is based on socio-cultural norms and will therefore differ from culture to culture. Not all nations have responded to globalisation in the same way due to the specificities of national history, politics, culture and economy. For example, the Japanese consider that their greatest design successes are achieved in circumstances where some kind of careful, systematic analysis can be applied to a design problem from which a solution will result (CNAA, 1984; Hall and Hall, 1987). However, design in the UK is often regarded as the result of radical, even eccentric processes of creation (Ashton and Deng, 2006).

Much of western management education assumes the purposes, structure and needs of businesses that prevail in Europe and the US. There are issues around the western centricity of business and design language, for example, certain terms and ideas do not literally translate into Chinese (Pu, 2001; Wong, 1996; Xin and Pearce, 1996; Yang, 1994; Hofstede, 2001). There are further issues pertaining to the impact of cultural norms on the acceptance of risk and

freedom of action which current western thinking assumes is required to encourage creativity. In light of DME in China, implementation of creativity becomes the centre of taskforce and mission, which is to foster future design managers with a scope of global civilisation, understanding of native culture, all of which should be readily integrated into the demands of the current info-economical era.

Like all human activities, culture influences ‘information systems’ in a myriad of ways; also different traditions will lead to culturally specific norms for management (Harvey 1997; Hofstede 2001; Clifford and Marcus 1986; Chen 1995; CNA, 1984; Hall and Hall, 1987). For example, in management disciplines in China, there has been a focus on directive management methods and quantitative management knowledge and skill approaches whereas design management in the west involves human centred approaches and qualitative management knowledge and skill approaches (Branine 1996; Littrell 2002).

Thus, the first research question is:

Q1: How does Chinese postgraduate design management education (Pg DME) deal with the challenges to knowledge transfer; posed by the need to accommodate and embrace cultural issues?

1.1.2.1.2 Challenge Two: Building Curricula to Meet Industry Needs

Course curricula are developed in the context of a range of influences involving government, labour market trends, perceived needs of employers and resources within the institution. In the UK, degree course curricula commonly contain three main elements – generic or transferable skills including learner autonomy, contextualising input and discipline specific content. In recent years, the UK government has placed considerable emphasis on the first element as the nature of the labour market here requires flexible

employees who will move between industries, set in the context of diminishing manufacturing and the continued dominance of service industries (Holden and Jameson, 2002). The impact of employers' needs is also a potent force in curriculum development and there is here the potential for tension between short term usefulness of graduates and longer term educational benefits. Where it exists, the role of 'design manager' is extremely varied, depending on the type of industry and company. There is however an acknowledged core to the subject which will be found in all courses.

The discipline specific curriculum of design management has evolved over the past two decades and there are a number of particular curriculum issues that deserve discussion. Most of them deal with curriculum content and revolve around the various issues that have been levelled by observers in both the corporate and academic communities (CNNA, 1984; Borja De Mozota and Dong, 2009; Holland, 2007). Particularly, promoting innovation for product development to meet industry need takes various forms, such as: new ways of thinking about business goals and structures; new insights into technology and its human relevance; new understanding of product- user interaction. Some courses put considerable emphasis on the links between marketing and focus on brand building, for example, Brunel University in the UK, managing design projects and creative activities is a core element in design management courses.

Providing experience in collaborative interdisciplinary learning is an important part of the core curriculum in design management. For such experience, the more relevant complements to DME are design, business, engineering and social sciences (Nirma 2001; Winograd 1997). Unifying these four disciplines is undoubtedly a taxing endeavour. In most educational institutions, these disciplines have distinctive identities yet remain mutually distant. In more recent years, design management curriculum has encountered problems with insufficient attention being paid to the external (legal, social

and political) environment (Porter, 1988). This criticism voices the concern that universities have been overly concentrating on the internal operations and management of design (i.e. the traditional functional areas such as finance, production and analytical techniques). Also they have generally tended to neglect the necessity of being able to cope effectively with the external environment. Due to the increasingly complex environment in which design management operates, design management curriculum must afford more consideration to whether it has the appropriate balance between the internal and external focus.

To successfully transfer a curriculum to support Chinese industry from the west, academic curriculum developers must be sure that the needs in the two regions are similar. The likelihood of a direct match is distant. It is not even clear that organisational structures or the current design challenges are sufficiently similar. As suggested above, there are also issues around the western centricity of business and design language. This is not so much a practical problem of translation but a more profound issue of cultural emphasis and difference (Newell 1999). It is useful in reviewing these debates on culture and curriculum to consider the diversity of provision which is possible under the design management banner, a factor which for some exposes its weaknesses as a professional qualification but alternatively embraces a richness of approach and outcome. Therefore, the 2nd research question is:

Q2: What should Chinese design management students learn on postgraduate design management education (Pg DME) programmes in order to meet industry needs?

1.1.2.1.3 Challenge Three: Teaching and Learning Strategies

The nature of design and DME in the UK today is a result of its development from roots in apprenticeship and its fit with the traditions of academia which it joined relatively recently (Ashton and Deng, 2006). Different traditions within education will lead to culturally specific norms for teaching and learning. HE in the UK in the 1990s, made considerable efforts to understand and highlight aspects of teaching and learning rather than regarding a course simply as a structure to ‘stuff’ students with facts. The role of particular teaching strategies and learning styles were presented as the means by which skills could be acquired and there was a move away from directive teaching towards student-centred learning (Ashton, 1995). Design schools, it was argued, were already implementing such teaching strategies. In the UK, design management courses are located both in design schools and in management schools and it is likely, but has not been formally established, that teaching and learning may be different in each. Both however, place and emphasis on problem-based learning (PBL). Margetson (1997) whilst acknowledging that PBL has been accused of being without a knowledge base, believe on the contrary, that it requires highly structured knowledge acquisition but in the context of problems which motivate the learner. Some link PBL with learning from experience as the learning is derived from the process of working on the particular problem. This puts an emphasis on how learners’ process experience based on the theory that action follows thought. Experiential learning is the basis of design education in the UK and although it may not be employed wholeheartedly in DME, it is often the backdrop against which such courses exist.

Successful participation in problem, project or experiential learning requires particular kinds of learning styles. Action/reflection modes of learning prevail in this kind of educational environment (Ashton 1995) and individuals who have experienced a consistent diet of this kind of teaching strategy tend to amend their preferred learning style to that which achieves success in that

environment. Key writers in this area have recognised that each individual may have a preferred mode of learning (Kolb 1984; Honey and Mumford 1992). From previous research using Honey and Mumford's learning styles inventory, it has been shown that design students are strong in action and reflecting learning styles but less comfortable with theorising (Ashton 1995). Kolb (1984), Honey and Mumford (1992) argue the idea that individuals in different professions have different learning styles and therefore problem solving approaches.

Thus, the 3rd research question is:

Q3: How should the relationship between learning styles and cultural aspects, in terms of postgraduate design management education (Pg DME) in China, be accommodated?

1.1.2.2 The Research Aims

In order to answer the research questions, the research project aims are:

- 1) To explore the nature of the complex problems and challenges faced in DME when transferring from a UK to Chinese context;
- 2) To identify differences between the UK and Chinese demands that drive educational development in Chinese postgraduate design management;
- 3) To generate a deeper insight into Chinese Pg DME theory.

1.1.2.3 The Research Objectives

The research objectives are to:

- 1) Conduct an extensive literature review, which focuses on the key theories in knowledge transfer issues; design management theory; DME curriculum development / practice; and teaching and learning strategies;
- 2) Conduct a piece of comparative research to analyse the environment of Pg DMED on multiple levels, including cultural, governmental and industrial levels both in the UK and China;
- 3) Develop a current model of core curriculum content in existing Pg DME courses both in the UK and China; investigate, analyse and establish the content which Pg DME courses currently deliver and skills developed in both countries;
- 4) Critically investigate the best practice of Pg DME systems in HEIs both in the UK and China; to identify critical issues that design management knowledge and its postgraduate education should entail in China for further investigation;
- 5) Critically investigate current practice and attitudes towards the management of design in both public and private sectors in China;
- 6) Identify key issues surrounding design management knowledge and practice in a Chinese context to gain an increased insight into Chinese Pg DME theory;

- 7) Critically investigate and understand the impact of findings on the interaction in Chinese social, industrial and educational environment.

2.1 The Research Process and Structure of the Thesis

2.1.1 Research Process

The research focus has been subdivided into three parts:

Part One: Literature Review

- 1) Focus on the key theories in knowledge transfer issues; design management theory; design management education development (DMED) and its practice.

Part Two: Comparative Research Study

- 2) Analysis of the environment of Pg DMED on multiple levels, including cultural, governmental and industrial levels both from the UK and China ($n=17$; see Appendix 2-3 for details);
- 3) Identification of current models of Pg DME both from the UK and China ($n=21$; see Table 4.1 and Table 4.4 for details);

This part of the research started with a mapping of UK postgraduate degree level design management provision ($n=14$; see Table 4.1 for details) followed by a critical analysis and evaluation of the approaches and curriculum content. Since the curriculum of Pg DME is a generic framework which universities customise in light of their different contexts, most universities in the UK that have Pg DME programmes were targeted in the survey in order to present a wide variety of course content.

Moreover, current Chinese models of Pg DME were identified through secondary sourced material ($n=7$; Table 4.4 for details). This targeted all the universities in China that have Pg DME programmes, to investigate current design management core curricula in Chinese HEIs and to identify culturally sensitive areas for further investigation.

- 4) Investigation of best practice in Pg DME systems through in-depth interviews of leading academic individuals selected both in the UK ($n=5$) and China ($n=3$) (see Table 4.7 for details);

Open-ended, in-depth interviews were undertaken with the key players in Pg DME both within the UK and China. A series of 8 semi-structured interviews were conducted with course leaders; researchers and other senior academics involved in the operation of design management delivery. This has provided key information on existing postgraduate design management.

- 5) Test against Chinese needs through a collection of primary data both in public and private sectors in China ($n=10$; see Table 4.13 for details);

A sample of 10 companies are identified and selected in China. As a result of in-depth interviews, data were collected on design managers' current roles and responsibilities. Interview questions were focused on current roles and responsibilities; in order to gain an accurate insight into how design managers work in their business environment.

Part Three: Main Findings and Conclusions

- 6) Evaluation and discussion of these new developments and their implications.

In the 3-phased comparative research study, comparative and content analysis methods were employed through the DME related policy study (1st phase) and Pg DME curriculum development (2nd phase) study and in the in-depth interviews (3rd phase). All the interviews were examined for the presence of themes and key words which were coded and then compared with the data both from the UK and China. Consensus opinions and significant differences were noted as the most important issues to be addressed.

Figure 1.2 outlines the research design: process of the research.

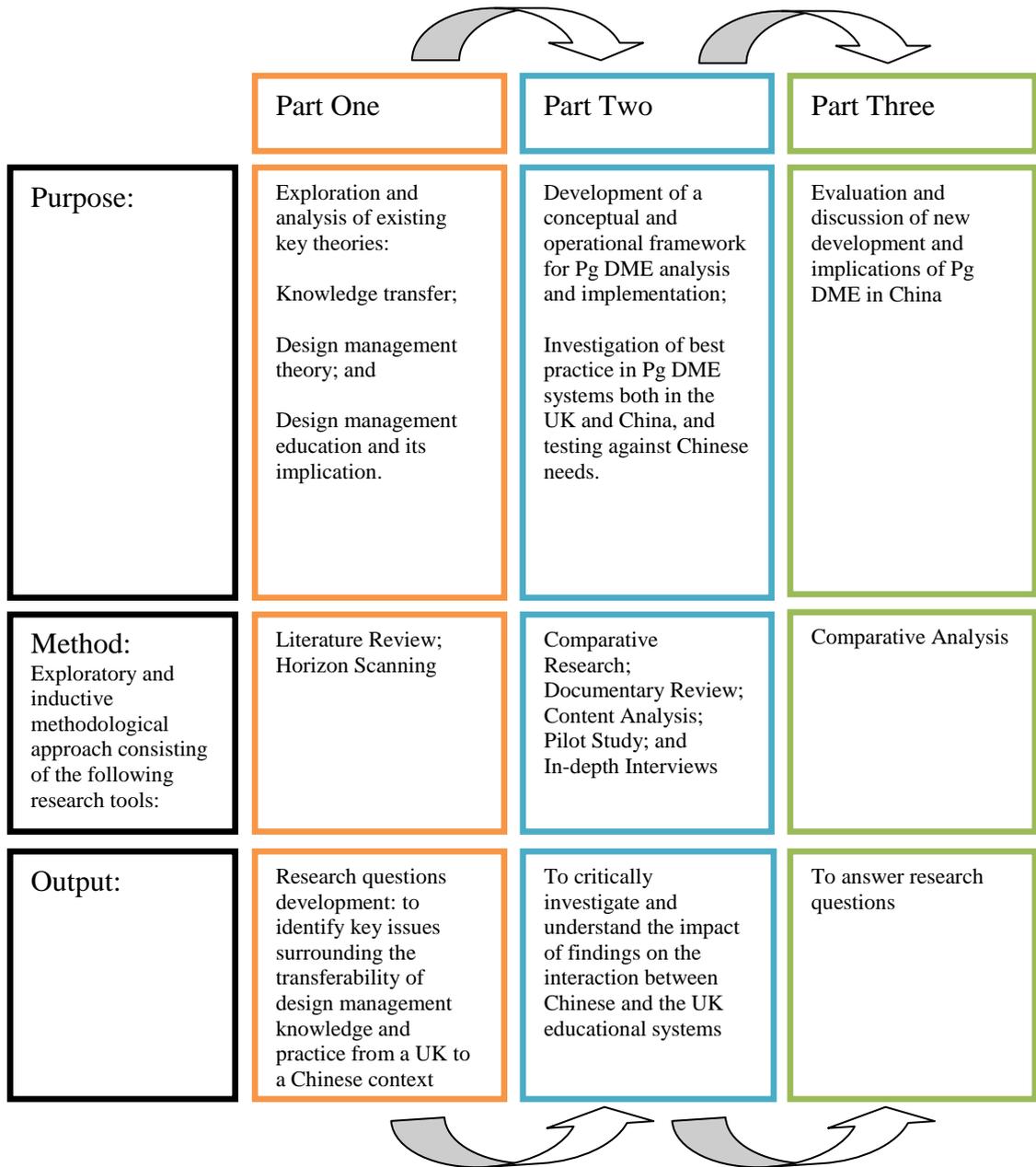
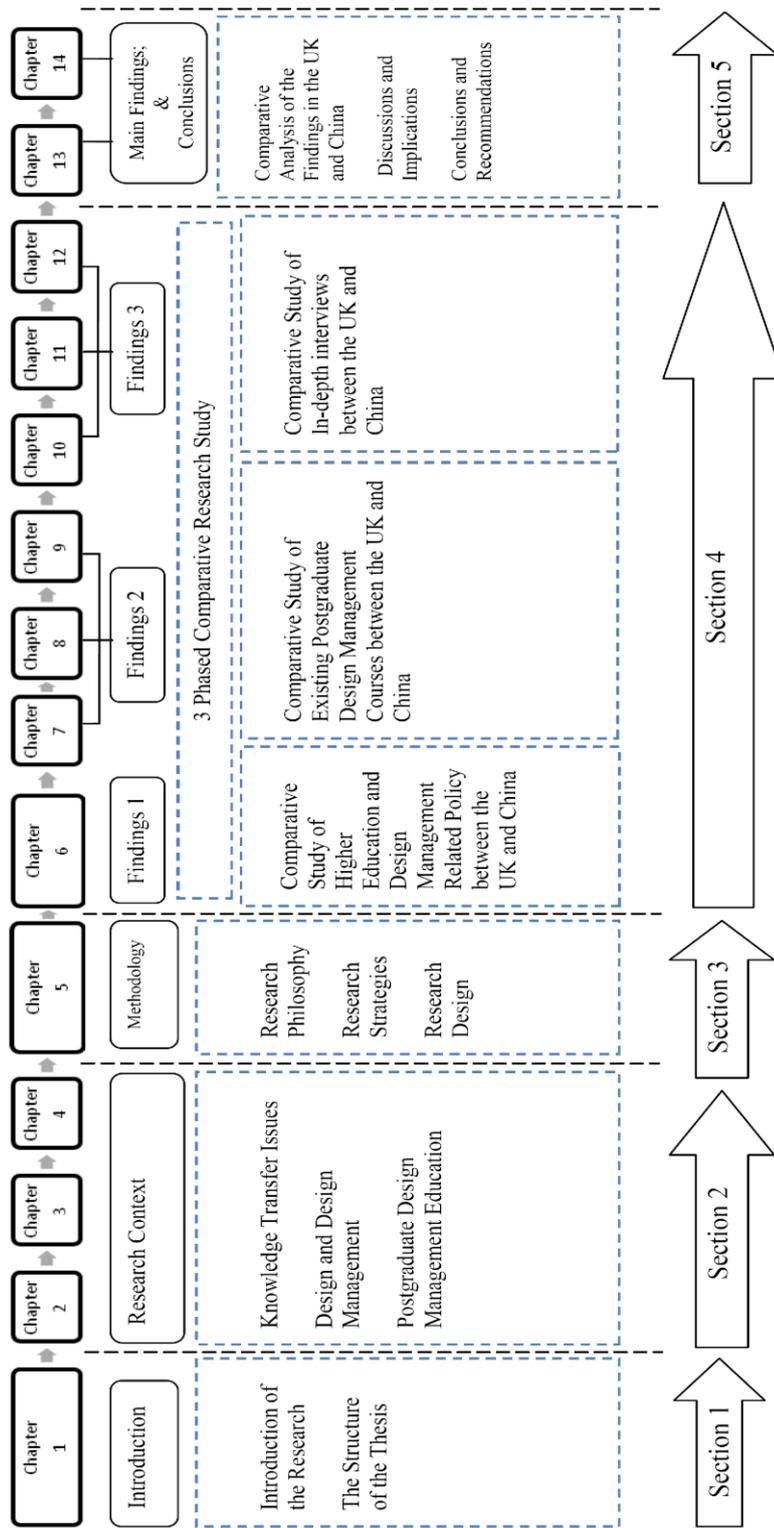


Figure 1.2 Research Design, Process of the Research

2.1.2 The Thesis Structure

The Entire thesis of the research study has been divided into 5 sections with 14 individual chapters; Figure 1.3 outlines the structure of the thesis.



- Section 1: Introduction and Overview of the Study
- Section 2: Research Context
- Section 3: Research Philosophy & Strategies, and Research Design
- Section 4: 3 Phased Comparative Research Study
- Section 5: Main Findings; Discussions and Recommendations; and Conclusions

Figure 1.3 Structure of the Thesis

Section Two:
Research Context
Chapters 2, 3, 4

Introduction

Design management education in China has, in recent years, experienced a period of particularly rapid growth (TLRP, 2008; Baker, 2007a; Brandenburg and Zhu, 2007; Yin and White, 1994; Kwong, 1996; Mok and Chan, 2001; Zhu, 2000; Li, 2000). However, having almost no tradition of local provision, this growth has largely been met by the ‘importing’ of courses from the west (Cai, 2009; Liu and Zhan, 2008; Ashton and Deng, 2006; Liu, 2009; Liu, 2006; Deng, 2001). Whilst the wider effects of globalisation and importation are being felt in a positive light, differences in culture, education systems and economic drivers make the transfer complex, requiring interpretation as well as translation (Sun, 2010; Ashton and Deng, 2006; Liu and Zhan, 2008).

The aims of the literature review in this chapter are:

- To define knowledge transfer, identify the essential issues of knowledge transfer;
- To investigate existing theories of design management and identify the essential factors in design management;
- To identify DME and its important contents and implications;
- To identify the most important tacit and explicit knowledge in the transfer of Pg DME curricula and teaching & learning.

Therefore, this section will conduct an extensive literature review, which focuses on the key theories in design management; DME and curriculum development and the crucial influence of knowledge implication. It is crucial to note that the entire review will be split into four separate parts in order to cover the primary aspects involved in this study. These are:

- Knowledge transfer issues: knowledge; national culture; and cultural role on government policy (Chapter 2);
- The theoretical context of design management: managing design in organisational dynamics; design leadership; managing design in strengthening cultural impacts on innovation, creativity and management style (Chapter 3);
- Design management education: the role of HE in economic growth; implications for DME; Pg DME curriculum and skills development; cultural role on teaching & learning (Chapter 4); and
- Summary of the Pg DME transfer issues on the reflection of above points.

Figure 2.1 outlines section two: the research context.

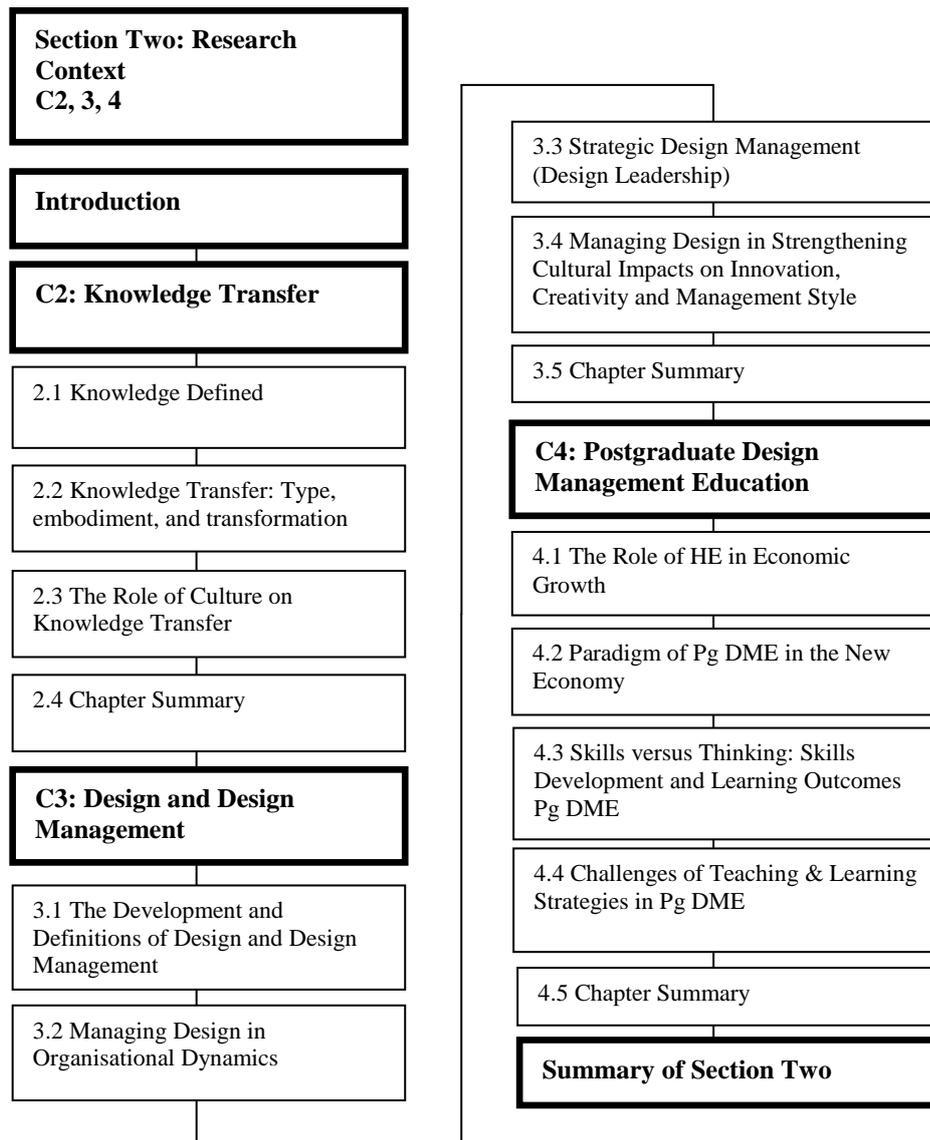


Figure 2.1 Section Map: The Research Context

Chapter 2: Knowledge Transfer

This is the 1st of three chapters discussing the research context.

As national boundaries become more permeable, the transfer of knowledge has become increasingly important. Through the free movement of personnel across national boundaries opportunities for knowledge transfer have increased (Pablos, 2004). These events have generated interest into the ways that HE can engage in knowledge transfer and create a knowledge network globally.

This chapter will explore knowledge transfer issues and the following themes will be discussed: 1) the definition of knowledge transfer; 2) cultural roles on knowledge transfer; and 3) Chinese national culture and its role on policy making.

Figure 2.2 outlines of Chapter 2.

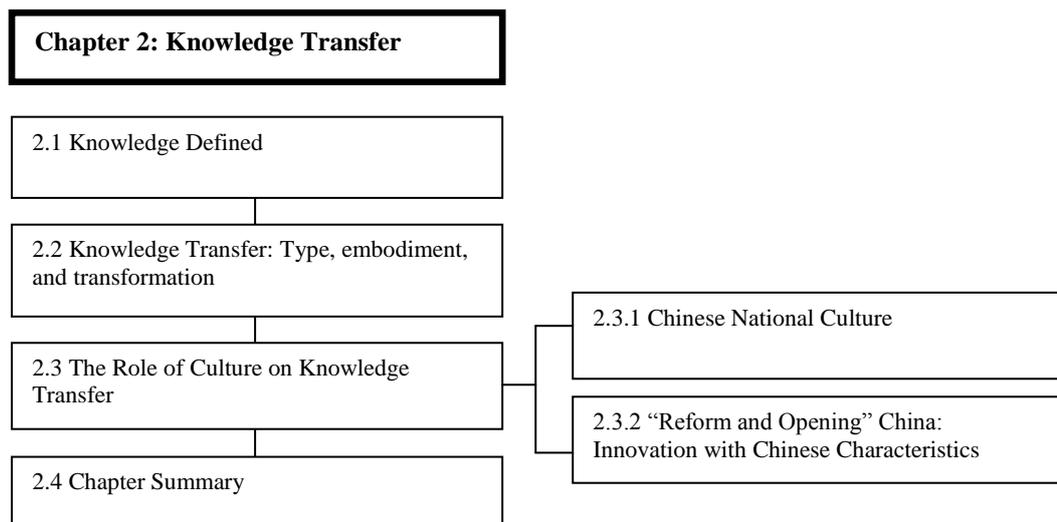


Figure 2.2 Chapter Map: Knowledge Transfer

2.1 Knowledge Defined

In order to articulate knowledge transfer, the concept of knowledge must first be determined. Dyer and Kentaro (2000) believe that most scholars divide knowledge into two types: tacit or explicit. Explicit knowledge is seen as that knowledge which can be codified and shared, presuming that the '*syntactical rules required for deciphering it are known*' (Kogut, Bruce and Udo Zander, 1997:386). Explicit knowledge, which can exist either individually or collectively, is documented and can be transferred in a formal and systematic way through rules, policies, and procedures (Pablos, 2004; Polanyi, 1962). By comparison, tacit knowledge is 'sticky', and difficult to codify and transfer (Nelson and Winter, 1982). Tacit knowledge exists either in the heads of individuals or a collective body and has been acquired through experience and repetitive actions (Kostova, 1996). Another fundamental concept is that knowledge is either viewed primarily from a functionalist perspective, or recognised from the inherent ambiguity, as emphasised by Alvesson (2001).

In this research study, both knowledge types are considered relevant. Knowledge transfer thus refers to transferring not only codified information, but also beliefs, images, experiences and contextualised practices (Ambrosini and Bowman, 2001; Davenport and Pruzak, 1998).

2.2 Keys of Knowledge Transfer: Type, embodiment, and transformation

There are numerous definitions of knowledge transfer within literature. Knowledge transfer has been defined as an attempt by an entity to copy a specific type of knowledge from another entity (Rogers, 1983). Others have defined knowledge transfer by focusing on such elements (Lucas, 2006) as:

- Speed: how quickly knowledge is transferred;
- Extent: how much of the knowledge is transferred;
- Effectiveness: ensuring that efforts provide the desired results; and
- Institutionalisation: ensuring that the new knowledge becomes embedded within the organisation's fabric.

However, in this research study, speed and extent of knowledge transfer are considered to be less important. Instead, it is about ensuring that efforts provide the desired results (effectiveness) and ensuring that the new knowledge becomes embedded within the organisation's fabric (institutionalisation). Therefore, for purposes of this study, knowledge transfer is defined as '*either the identical or partial replication of knowledge from one place to another and involving both a provider and a receiver*' (Kostova, 1996; Szulanski, 1996).

a, Type

Lucas (2006:259) suggests that the knowledge being transferred is '*embedded in the practices, routines, technologies, and individuals that permit the implementation of new techniques designed to improve performance*'. It involves the movement of knowledge regarding '*how to do things, what to be done, and when these activities should occur*', such that new techniques can be successfully employed. However, it has been argued that the movement of personnel is particularly important to the knowledge transfer process since there is some amount of 'stickiness' in these practices to be implemented (Song et al., 2003; Szulanski, 1996).

b, Embodiment

One challenge to successful transferring tacit knowledge is directly related to ambiguity. 'Ambiguity' has been identified as '*when those involved in the transfer cannot reduce what is being acquired into a precise list of items that*

contribute to a particular outcome' (Lucas, 2006:259). This is a manifestation of the possible way that knowledge may be embedded within its original context (Song et al., 2003; Szulanski, 1996; Zollo and Winter, 2002). Embeddedness highlights the realisation that replication of the original context is not possible and this impedes knowledge transfer efforts. Once knowledge is found, typically, it is embodied in individuals and processes (DeLong and Fahey, 2000; Hall and Johnson, 1970).

- Individual-embodied knowledge is that *'which either has been acquired through experience and can be documented (explicit) or can only be shared through personal interaction (tacit)'* (Lucas, 2006:260). It has a social dimension to it, such knowledge for example, the result of people working together and developing routines between processes in which they are involved.
- Process-embodied knowledge is *'either embodied in routines and subroutines or facilitating the integration of several routines'* (Lucas, 2006:260). These processes allow for the effective and efficient utilisation of knowledge, and subroutines that are essential parts of a larger whole, which facilitate the integration of sub-processes (DeLong and Fahey, 2000). However, process-embodied knowledge may be either tacit or explicit. Process-embodied tacit knowledge for example, the transfer of personnel as part of the transfer of processes reflects the tacit component of process-embodied knowledge (Almeida and Phene, 2004). While Process-embodied knowledge that is explicit often involves the transfer of manuals and standard operating procedures, for example, an adoption of a new process.

c, Transformation

Adjustments must be undertaken to fit into the new context, once knowledge is acquired, as it needs to be transformed to be applicable the new environment where it is employed. This transformation is the third dimension of the knowledge transfer process, according to Lucas' study (2006). It is the ability to recognise and exploit technological opportunities within the organisation (Garud and Nayyar, 1994). There are certain items specific to knowledge and required to be adapted for the new conditions and applications. In order for this transformation to occur, it is essential for organisations determine how best to acquire and keep knowledge within the organisation. The transformation process involves finding ways to determine the appropriateness of knowledge, such as (Lucas, 2006:260):

- *How it can be incorporated into existing techniques with as little disruption as possible; and*
- *How best to ensure that what has been acquired is used and not mothballed.*

This transformation is the complement to absorptive and retentive capacities, since successful knowledge transfer needs people/ organisations to have the abilities to recognise these opportunities and to adapt what is being transferred to the new environment while ensuring that they are proper institutionalised. (Cohen and Levinthal, 1990; Szulanski, 1996).

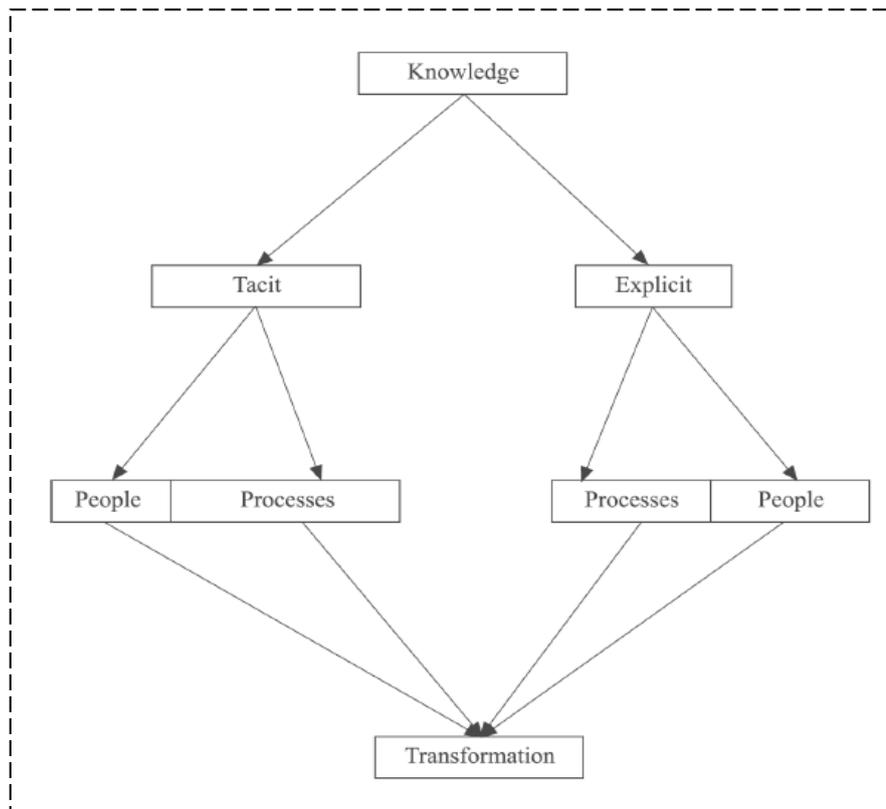


Figure 2.3 Generalised Model of Knowledge
(Lucas, 2006)

The framework shown in Figure 2.3 suggests that knowledge is embedded in technologies, routines, practices, and people. Successful knowledge transfer is predicated on an understanding of its origins, people, and processes. Knowing this helps us to ascertain what challenges exist, where they exist, and how the social context may influence transfer efforts.

2.3 The Role of Culture on Knowledge Transfer

Cultural factors have long been thought to influence the communication and success of potential strategic alliances (Brouthers et al., 1995; Contractor and Lorange, 1988; Doz and Hamel, 1998). Similarly, *‘culture is seen to shape how actors behave in business relationships and networks involving people from*

several national cultures' (Möller and Svahn, 2002: 1). However, Culture is a very complex and "nested" phenomenon (Swindler, 1986). For example, there are cultural layers such as national culture, organisational or business culture, and the professional culture, all of which jointly may affect an individual's behaviour in a specific context (Möller, 2002; Almeida et al., 1998; Bhagat et al., 2002; DeLong and Fahey, 2000).

As this study is concerned with an investigation into design management knowledge transfer (DMKT) crossing cultural boundaries, Chinese national culture becomes highly relevant. However, the idea behind national culture is that it has been affected by multiple issues, such as education, national history, religion, art, and social and governmental policy (Wong, 1996; Xin and Pearce, 1996; Yang, 1994; Handfield and McCormack, 2005).

2.3.1 Chinese National Culture

Chinese national culture dates back 5000 years to the education of Confucianism and Taoism (Gu and Xue, 2004). Confucian principles emphasise the importance of interpersonal relationships, avoidance of conflict in order to cultivate harmony, the concept of "face", and respect for age and hierarchy. Taoism, for its part, focuses on creativity and harmony with nature. In this research context, a number of particularly dominant themes in Chinese national culture are considered relevant to this study (Xie, 2004; Handfield and McCormack, 2005).

However, the long-term orientation of Chinese culture traces its roots to Confucian dynamism, which values stability over change (Li et al., 2003; Leung et al., 2005). In literature, modern Chinese national culture has been described as being highly collective (Hofstede, 1980 and 2001; Wong, 1996; Xin and Pearce, 1996; Yang, 1994; Hopkins et al., 2004), characterised by a preference for tightly-knit social networks, the expectation that in-group

members will support each other, and a strong urge to maintain social harmony within the in-group. Interestingly, there is a high level of trust between in-group members, a phenomenon which has strong implications for trying to establish relationships--“Guanxi”, with Chinese organisations (Lee, Pae, and Wong, 2001; Leung et al., 2005; Flynn et al., 2007).

Another dimension of national culture that is particularly relevant to China is power distance. Hofstede (1980) suggested “Power Distance” is the expectation that power is distributed unequally. High power distance is evident in China's pervasive centralised authority and hierarchical structures (Martinson, 1996; Redding, 1993 and Ng 1998; Hopkins and Hopkins, 2004). Chinese people expect that power is unequally distributed and naturally defer to those they perceive to be their superiors, whom they expect to be benevolent and treat all people fairly, providing them with stability, close supervision, and explicit rules (Pun, 2001). However, *‘Power distance is consistent with the focus on “Guanxi” relationships with upper-level authorities, particularly in public sectors and state-owned enterprises, and the strong hierarchical ordering that makes empowerment challenging’* (Flynn et al., 2007:182).

Therefore, in China, this is reflected in bureaucracy and in dedication to a lasting “Guanxi” relationship, once established. Long-term orientation has tremendous potential as an explanatory variable in many areas, including management and human resource issues (Li et al., 2003; Leung et al., 2005; Hopkins et al., 2004).

2.3.2 “Reform and Opening” China: Innovation with Chinese Characteristics

Innovation is a key component of the Chinese government's 11th five year plan which aims to bring about *“the great renaissance of the Chinese nation”* through *“innovation with Chinese characteristics”*. Innovation is viewed as a

key building block for China's future in both the public and private sector. The quest for innovation is on the agenda at the highest levels of government, and all companies in China have been asked to contribute to the effort (National Bureau of Statistics, China, 2005; MLP 2006-2020; McGregor, 2009).

It was in October 2005 that the Communist Party of China (CPC) Central Committee met and elevated 'Indigenous Innovation' to a strategic level equal to Deng Xiaoping's 'Reform and Opening' policy in the 1970's. The campaign was enshrined as a national strategy that would put science and technological development at the centre of rebalancing China's industrial structure and development pattern (McGregor, 2009). In January, 2006, President Hu Jintao stated in the National Science and Technology Forum (see the minutes at www.people.com.cn) that: *"In the face of international scientific development and increasing international competition, by seeing the development of science and technology as a central thread in the development strategy and actively committing to its progress, China can seize the opportunity for development"*. Following President Hu's speech, Premier Wen Jianbao stated in unveiling the 2006 policy outline: *"We fundamentally have to rely on two main drivers, one, to persist in the promotion of opening and reform, and two, rely on the progress of science and technology and the strengths of innovation"*.

In February 2006, the landmark document that launched the campaign carried the bureaucratic title "The National Medium and Long Term Plan for the Development of Science and Technology (2006-2020)", known in the west as the MLP (Yong, 2006). It officially confirmed the Party's decision. The MLP described itself as the *'grand blueprint of science and technology development'* to bring about the *'great renaissance of the Chinese nation'*. However, the MLP highlighted a number of China's most serious problems and development shortcomings alongside a list of goals and objectives for solving them through science and technology. The MLP called for using the guiding principle of *'zizhu chuangxin'*, as *'Indigenous Innovation'*, to leapfrog China into a

leadership role in science-based industries by the year 2020. MLP also referred to a longer term goal of *'laying the foundation for China to become a science and technology power by the middle of the 21st Century'*. It calls for the Chinese people to *'seize the opportunities and meet the challenges brought by the new science and technology revolution'* because *'despite the size of our economy, our country is not an economic power, primarily because of our weak innovative capacity'* (MLP).

The remarkable components of the plan are a series of megaprojects. They are seen as vehicles for an import substitution action plan aimed at creating Chinese indigenous innovations through *"co-innovation"* and *"re-innovation"* of foreign technologies. According to the MLP, as the *'major carriers of uplifting indigenous innovation capacity'*, the megaprojects are aimed at *"assimilating and absorbing"* advanced technologies imported from outside China in order to *'develop a range of major equipment and key products that possess proprietary intellectual property rights'*. As a result, a series of development initiatives that allow China to *'own'* the intellectual property that it makes and sells, is lessening its dependence on technology transfers. The message is clear: both Chinese private and public sectors should bring added value through innovation to the table as they continue to collaborate with foreign partners. This explains policy-driven actions such as the government's 19% increase in investments in science and technology development reaching RMB 71.6 Billion (approximately GBP £7.16Billion) in 2006 (Yan, 2006).

In short, China became the world's third largest economy in 2006, and *'Indigenous Innovation'* is a massive and complicated plan to turn the Chinese economy into a technology powerhouse by 2020 and a global leader by 2050 (MLP; Xinhua Electronic News, 2007). However, China's fast growth and close integration with the global economy has come at a price that makes innovation imperative for China's future. There is a need to:

- Reduce reliance on low value added labour. Wages in China have been increasing 14% annually on average since 2000 (National Bureau of Statistics, China, 2005). Innovation encourages Chinese companies to attain more sustainable global competitive advantage.
- Reduce environmental damage and inefficient energy consumption. China's success as a manufacturing hub has come at the high costs of environmental pollution and high energy consumption. The International Energy Agency forecast China would become the world's largest contributor of global warming gases by 2009, a decade sooner than previous estimates (UNDP, 2005; Bradsher, 2006; IBM Global Business Services, 2007). Therefore, new technologies and business practices will be critical for addressing environmental issues.
- Address social issues. Mounting income disparity and a steadily ageing population will also impact China's growth trajectory. Population projections put that number at 334 million in 2050, including 100 million aged 80 and older (McGregor, 2009). Innovative approaches are needed to create new economic models and policies to address such issues.

To conclude, innovation is a core to drive the next wave in China's economic growth, displacing cost advantages as its prime competitive tool and enabling China's industries to deliver and capture more value. At the same time, innovation will serve the nation as a means of tackling China's massive social and environmental issues (MLP; McGregor, 2009; IBM Global Business Services, 2007).

2.4 Chapter Summary

This chapter (Chapter 2) has explored the knowledge transfer issues and discussed the following topics: knowledge transfer; cultural roles on knowledge transfer; Chinese national culture; and Chinese characteristics on policy making. The essential issues are:

- Successful knowledge transfer is predicated on an understanding of its origins, people, and processes.
- In China, there are cultural layers which jointly may affect an individual's behaviour in a specific context, and long-term orientation has tremendous potential as an explanatory variable in many areas, including management and human resource issues.
- Innovation will drive the next wave in China's economic growth, displacing cost advantages as its prime competitive tool and enabling China's industries to deliver and capture more value.

In the next chapter (Chapter 3), it will explore the importance of the concept of design management knowledge, through a detailed literature review on existing theories of design management and identifies the essential factors in design management and its relationship with culture.

Chapter 3: Design and Design Management

This is the 2nd of three chapters presenting the research context.

As this research study is to conduct an intensive investigation into desirability of the transferability of knowledge in Pg DME curricula and teaching and learning strategies from the UK to China, this chapter will explore the importance of the concept of design management knowledge where the following topics will be examined in detail:

- The Development and Definition of Design Management;
- Managing Design in Organisational Dynamics;
- Promoting Strategic Design Management (Design Leadership) and
- Managing Design in Strengthening Cultural Impacts on Innovation, Creativity and Management Style.

Figure 2.4 outlines Chapter 3.

Chapter 3: Design and Design Management

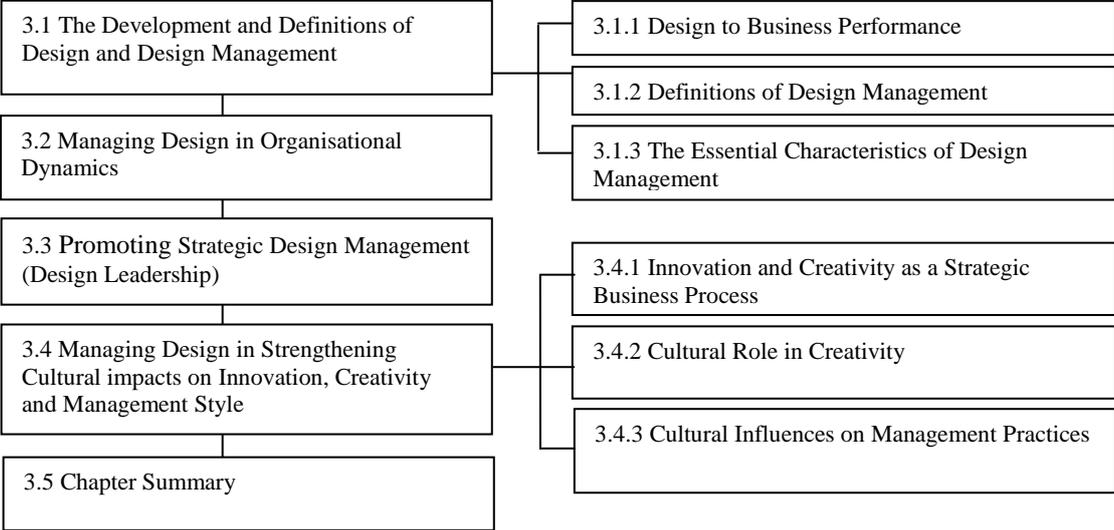


Figure 2.4 Chapter Map: Design and Design Management

3.1 The Development and Definitions of Design Management

3.1.1 Design to Business Performance

Design is readily associated with industrial product design for manufactured products. However, the application of design is a broad field covering many different disciplines. For example, designing for aesthetic appeal; for function; for ease of manufacture; for sustainability; and designing for reliability or quality and business processes themselves. Furthermore, Elements of design affect the delivery of a product/service, branding and advertising strategy. British Standard BS7000-10, a guide to managing product design refers to design as a verb *‘to generate information from which a required product can become reality’*, and as a noun *‘a set of instruction necessary to construct a product’* (BS7000-10, 2008:16; Best, 2006). Thus, design can be viewed as a creative activity; as the tangible outcome, i.e. the product of design; or as a

structured total process (Press and Cooper, 2003; Best, 2006; Stamm, 2005).

Over the past three decades, design has emerged as a potent economic force in both the manufacturing and service sectors of western industry and the management of design has become a key issue for companies (Dumas, 1990). For instance, magazines such as Business Week, innovation consultancies such as IDEO and manufacturers such as APPLE have made a conscious effort to bring design and designers into the heart of the organisation. Design offered further added value as can be seen through such definitions as management function, a cultural phenomenon and as an industry in its own right (Press and cooper, 2003). See Figure 2.5 for further explanation of the indifferent levels of design, adopted from Stamm (2005).

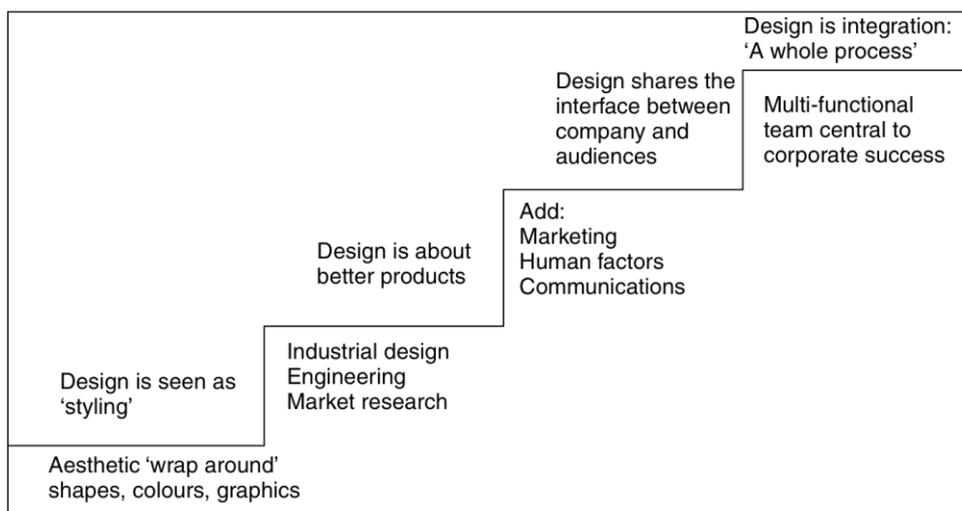


Figure 2.5 Added Value in Different Levels of Design

Fairhead (1988), adopted in Stamm (2005:15)

As organisations recognise that both national and global competitiveness require the development of new products and services, and innovation to gain competitive advantage in business (Press and Cooper, 2003), design has been regarded as an outcome, which makes an intangible contribution to economic successes and has also been regarded as a strategic business tool which

enhances the global competitiveness of both business and nations (Blaich, 1988; DMI 2010). Whilst in 1993, Dormer recognised design’s role as ‘*making products attractive to consumers*’, nearly twenty years later, Andrew Summers, the CEO of Design Council, suggested that most successful businesses appreciate the contribution design can make to their strategy (Design Council, 2008). Stamm (2005:16) stated that ‘*The power of design is leveraged at the beginning and all through the development.*’ By considering design in the context of a business dimension, economic growth, creativity and innovation, design is thus defined as ‘*a sequential creative process that exploits new ideas which satisfy requirements, and translates into products and services*’ (Choi, 2009:33).” Thus, design is directly linked to innovation, productivity and business performance and is a crucial element for business success.

The model in Figure 2.6, developed by Swann and Birke (2005) shows one possible mapping of the channels of impact of design on business. ‘*Design plays a role as an input to innovation and R&D. It can also have a separate and direct effect on productivity and business performance, through process design, branding and marketing*’.

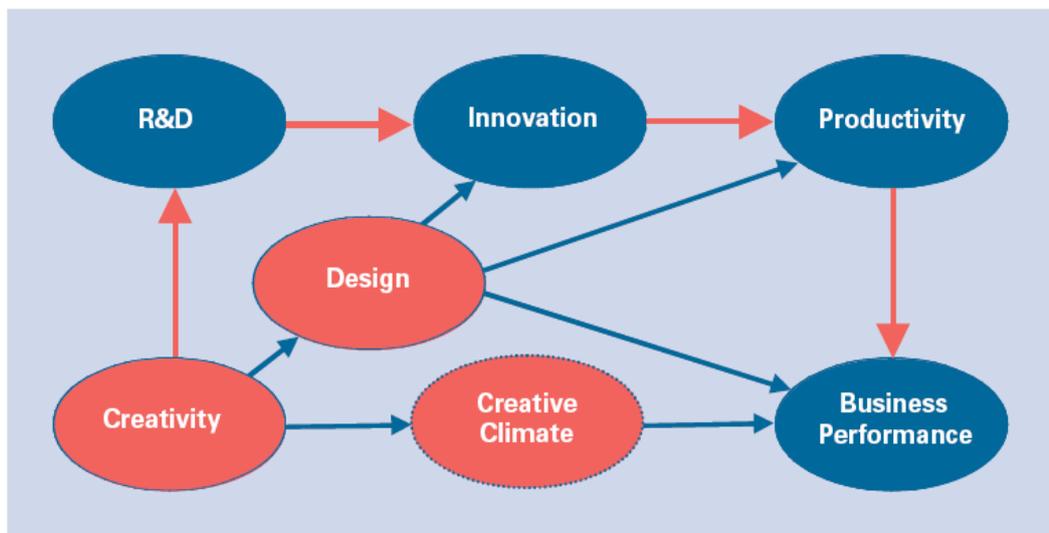


Figure 2.6 Linking Design to Business Performance
Swann and Birke (2005), adopted from TDI (2005: 15)

In essence, design is a potent strategic tool that organisations can use to attain sustainable competitive advantage. Furthermore, design contributes to the success of a product and a company's performance is critically influenced by management's attitude towards it (Hart et al. 1989). Olins (1985:37) stated *'Design is significant, potentially powerful management resource, susceptible like every other management resource to intelligent direction and control.'* Moreover, Tether suggested in 2005, *'If design has an economic impact, then we should expect to find it is most marked amongst those who are most expert in the application of design knowledge'* (TDI, 2005: 6).

To provide managers with insights into the implications of different approaches to the management of design, Dumas and Mintzberg (1991) have described five different ways and an evaluation of each option (see Table 2.1). In their view the fifth style, infusion, is the one most likely to lead to the most successful and comprehensive employment of design. He suggested, *'infusion – the permeation of design throughout the organisation. Infusion is informal; the ultimate intention is to have everyone concerned with design. Managers whose responsibilities touch design do not merely accept it but become part of it. Design thus becomes a way of life in the organisation'*.

Style	Critique
1. Design champion	Whether patron, crusader, team or consultant, may not be sufficient condition for the full realization of design in an organization, but he/she or it may constitute a necessary first step
2. Design policy	Is fine as long as it clarifies the beliefs that already exist in a company; by itself a design policy is of little consequence
3. Design programme	Sometimes causes a specific change in an organization and even has a lasting effect when that change serves as a model for other initiatives. But these follow-up initiatives must be implemented and that is commonly considered to require the next approach
4. Design as a function	For the vast majority of companies, the influence of design is as likely to be measured by the performance of marketing or production as by its own independent efforts
5. Design as infusion	The permeation of design throughout the organization. Infusion is informal; the ultimate intention is to have everyone concerned with design (silent design)

Table 2.1 Styles of Design Management
Stamm (2005: 20), based on Dumas and Mintzberg (1991)

To conclude, managing design is seen as a key tool for strategic advantage (Bruce and Bessant, 2000; Topalian, 1980a, Cooper and Press, 1995; Borja De Mozota, 2003; Hands, 2009). Design management has made considerable developments through the establishment of public institutions, such as the Design Management Institute (DMI), design community foundations; by Design Consultancies, such as *PARK (Germany) and IDEO (USA)*; through journals, such as *Business Week*. New educational courses have also emerged and research and professional books in design management have been published (CNAA, 1984; Cooper and Press, 1995; Bruce and Bessant, 2000; Borja De Mozota, 2003; Hands, 2009).

3.1.2 Definitions of Design Management

A plethora of definitions of design management can be found, many of which have been formulated by practitioners, such as '*18 views on the definition of design management*' from the Design Management Journal, 1998. And others from authors from both academia, and industry, reflecting a whole array of different perspectives of design management (Farr, 1995; Gorb, 1990; Topalian, 1980a; Cooper and Press, 1995; Bruce and Bessant, 2000; Borja De Mozota, 2003; Hands, 2009). These manifold definitions have been evolving over the last 60 years.

Between the 1950s and the 1960s, there was an increase in specialisms such as industrial, product, graphic and interior design. Farr (1966) defined design management as '*defining a design problem, finding the most suitable designer, and making it possible for him to solve it on time and within an agreed budget*'. In the late 1960s and into the 1970s Gorb and other academics began to encourage designers to learn about business, and business professionals to understand the untapped potential of design as a critical business function.

There was another increase in the popularity of design consultancies and emergence of 'iconic' designers in the 1970s and 1980s. It was prior to this, however, that in the mid-1970s, connections were being made between design and economy; in the UK, government reports recognised the value of design in business success (Cooper, 1993). In the late 1970s design management referred to the movement in Great Britain, Europe and America, which focused on design resources in corporate business. In 1975, the Design Management Institute was founded in the USA; in 1982, Peter Gorb, founded the Design Management Unit in the London Business School, whilst at the same time, the UK Prime Minister Margaret Thatcher held a design summit and launched the 'Managing Design Initiative'.

In the 1990s, Design management became more important through the change from a strategy of cost leadership, to quality leadership, to the strategy of performance leadership (Koppelman, 1993). Another definition was given by Robert Blaich (1993). He suggested that the implementation of design was a formal programme of activity within a corporation which communicated the relevance of design to long-term corporate goals and coordinating design resources at all levels of corporate activity to achieve the objectives of the corporation. As De Morzota (2003:233) suggested, '*Design management is rooted in the shift which are from a hierarchical model of management to more flexible organisational mode, which encourages individual initiative, independence and risk taking*'. BS 7000-10 gives the definition of design management as '*organisation, administration and implementation of a process for developing new products*' (BS 7000-10, 2008:19). Moreover, design management often operated in the area of design leadership which includes leading from creation of a vision to changes, innovations, and implementation of creative solutions (Turner and Topalian, 2002).

A wide variety of perspectives exists in the area of design management, which reflect a set of individuals, professions and contexts involved, such as

academia, the public or private sectors, business and industry, the design profession, and public or government bodies. There have been some knowledgeable attempts to provide agreed definitions for specific aspects of design and design management. However, it has also been seen that the model of design management has become more flexible; in the definitions on design management, the function of design management in different business events, and the comprehensive meanings about design management. Thus, design management intervenes, organises, mediates and structures in an increasingly more complex corporate world.

3.1.3 The Essential Characteristics of Design Management

A major report submitted by Corfield (1979) to the UK government argued that effective design management was key to companies remaining competitive in increasingly difficult markets. It recommended that product design should be recognised by companies as a key business function specifically identified as a board-level responsibility, and suggested that designers should participate at company-level for major resolutions. Pugh in 1991, proposed a "total design" model, with emphasis on undertaking design research through the established design concept in a design project, from the establishment of the market in advance of detailed feasibility studies, to the implementation of the commercialisation of product design. This model also includes related aspects of the role of design management in the design process, such as services, marketing and re-design. Thus, the design management process in many different applications may enable organisations to gain competitive advantage.

However, Cooper and Press (1995) argued that the term 'design management' contains a fundamental contradiction. Whereas design is based around exploration and risk taking, management is founded on control and predictability. It is important that design managers truly understand the way designers work so that the project is managed well without inhibiting

creativity. Oakley concluded that enterprises have a competitive edge over the "design". This is represented in the following aspects (Oakley, 1990; Jerrard and Hands, 2007:6):

- Commitment from top management to embrace the value of design and communicate it throughout the entire organisation.
- Inter-functional collaboration in design work: commitment and involvement are secured from key participants.
- Designers as visionaries: designers can provide an inspirational role and help to direct the organisation in new directions.

Topalian (1980b) commented that communication between different organisations and departments are crucial. The effective management of the platform is built on two different levels: company level and project level (Topalian, 1994). Therefore, BS7000 series of management design standards guide Part 2 (1997) developed the role of design management; divided into two parts: the "*company strategic level of design management*" and "*implementation of the project design and management level*". There is another common model which describes effective design management as being developed at three different levels. They are the operational level (project management), tactical level (middle management) and strategic level (senior management). To summarise the levels of design management:

- **Operational design management** is mostly concerned with the management of individual design projects and design teams. The goal is to achieve the objectives set by strategic design management (Geert and der Zwaal, 2006).
- **Tactical design management** deals with middle management activities like creating awareness of design issues in the company.

This level of design management emphasises the organisation of design resources and design processes.

- **Strategic design management** envisions the future. It involves the creation of the strategic, long-term vision and planning for design and deals with defining the type role of design within the company.

Table 2.2 the terms used to describe levels of strategy management and design management.

Strategic level	Tactical level	Operational level	Author / Source
corporate strategy	business strategy	functional strategy	Haberberg and Rieple, 2001
corporate strategy	business strategy	operational strategy	Johnson and Scholes, 1999
corporate / innovation design management	design agency management	design project management	Topalian, 1980a
design policy management	N/A	operational design management	Oakley, 1984
strategic design management	N/A	operational design management	Olins, 1985
strategic (macro)	organisational (meso)	team / individual (micro)	Francis and Fischbacher, 1996
corporate design management	design organisation management	design project management	Chung, 1998
anticipative / strategic design management	functional design management	operational design management	de Mozota, 1998
strategic design management	tactical design management	operational design management	Joziassse, 2000
board / top function	middle / business function	design activity function	Cooper, 2005
design strategy management	design resource management	design project management	Kootstra, 2006

Table 2.2 Terms Used to Describe Levels of Strategy Management and Design Management

Gillespie and Brain (2002: 78)

Powell suggested that the importance of design management is growing in four fundamental ways (Best, 2006: 18): 1) As a powerful resource for innovation that will effectively differentiate between businesses and build sustainable

competitive advantage; 2) The effective management of design making design more desirable in people's daily life, as people continue to find increasing choices in the marketplace, and become more determined to improve the quality of their lives; 3) The shift in attitude from design management to managing for design will unleash the potential of design; 4) The increasingly important role design will play in building a bridge between the fundamental economic and cultural aspects of individual nations and the world will open doors for design to make an important contribution to healthy and balanced societies worldwide.

Similarly, Stamm (2005) argued that design management has several components: 1) The injection of design thinking into organisations; in particular, helping leaders of organisations understand and appreciate the value and contribution of designers, design and design thinking; 2) Providing a bridge between designers and non-designers as their values and beliefs are often very different; this includes the management of designers, internal as well as external; and 3) Aiding the creation of a consistent and coherent representation of an organisation; this includes not only products and services but also architecture, culture, and organisational structures; and highlighting inconsistency between saying and doing, by people within the organisation as well as outside.

The review suggested that the management of design is not only concerned with products, but also for organisations to define themselves and shape their business process at different levels. In summary, successful design and management have a direct relationship with the following fundamental aspects:

- Managing Design in Organisational Dynamics;
- Promoting Strategic Design Management (Design Leadership) and
- Managing Design in Strengthening Cultural impacts on Innovation, Creativity and Management Style.

3.2 Managing Design in Organisational Dynamics

Design management needs to be rooted in an organisational environment since it is an interfacing activity of design and management. Gorb (1990: 2) suggests that design management is directly concerned with the organisational place of design, with the identification of design disciplines, which are relevant to the resolution of key management issues, and with training of managers to use design effectively. He argued that “*the effective deployment by line managers of the design resources available to an organisation in pursuance of its corporate objective*”. There are a number of successful design management models which have been approved through practice: business / organisations need to use different angles and ways to understand and use design management, design management is not simply “design project management”. Each company may find their own practical ways of managing the “design” (see Table 2.2), which is embodied in the organisation’s functions (Borja de Mozota, 2003; Topalian, 1990 in Oakley Ed, 1990).

However, Cooper (2005) believes managers in organisations take on the role and responsibility of design manager without having that distinct title, and bridges have been built with project management and the new product development profession. Oakley (1990), in particular, examines the business context of design and how, by embracing design throughout many different applications, it enables the organisation to secure a competitive advantage. He summarises the role of design at strategic level as:

- Designers as visionaries. Designers can provide an inspirational role and help to direct the organisation in new directions. Oakley suggests that ‘*They alone may provide creative clues to the possibilities which are available to a business*’.

- The need for inter-functional collaboration in design work. For success in any design programme, it is vital the commitment and involvement are secured from key participants. *‘The dangers of treating design as an isolated, out- of the mainstream activity cannot be overstated; at worst it may rise to total rejection of design result’.*
- The importance of both project and policy aspects of design. There is some tendency for the project aspects of design management to receive the attention and policy considerations to be largely neglected as *‘Too many managers focus their attention on the running of individual design projects and completely fail to consider why the projects have been set up in the first place’.*

Gorb (1988) takes a similar perspective in discussing the importance of design management at a strategic level. The contributors discuss a key aspect of design management philosophy, validating the premise that design is vital and often adds value to the organisation. Olson et al. (2000) take this sentiment further, by not only advocating the importance of strategic design management, but providing a five-step framework to successfully incorporate it into the organisation’s competitive strategy. The five distinct stages are shown in Table 2.3.

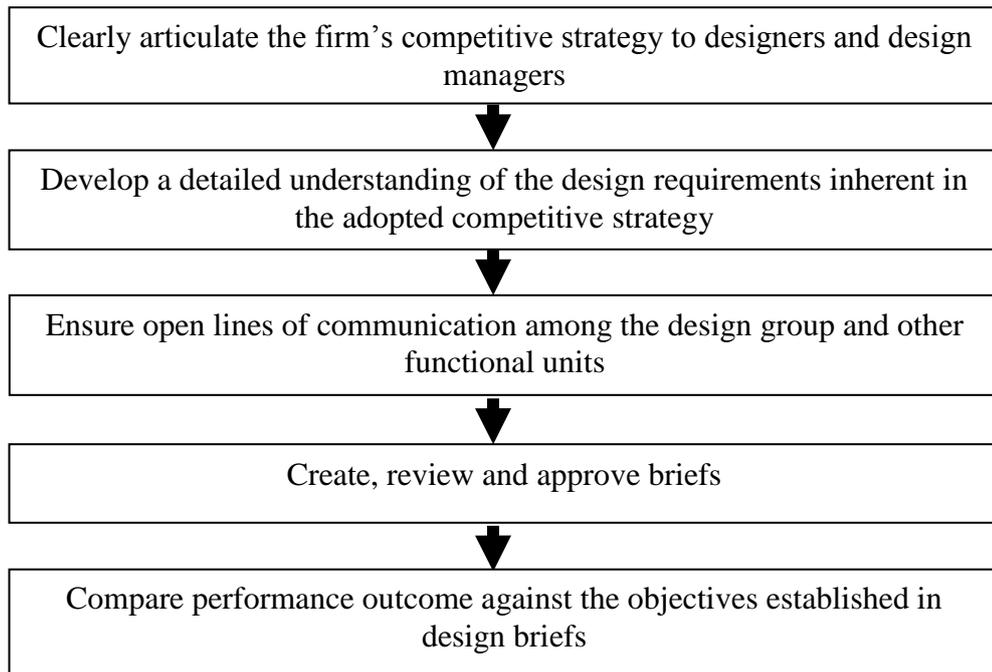


Table 2.3 Five-step Framework to Incorporating Design Management into the Organisation

Olson et al. (2000), Adapted from Jerrard and Hands (2007: 7)

Lucerne University of Applied Sciences and Arts (Switzerland) has visualised a framework namely ‘Lucerne Design Management Model’, which combined design in the relationship with organisation (see Figure 2.7). In the model, the perspectives of design management have been allocated a position on the triangle representing fundamental dimensions (base), activities (right side), level of activities (left side) and movements of the implementation of design management (inside triangle).

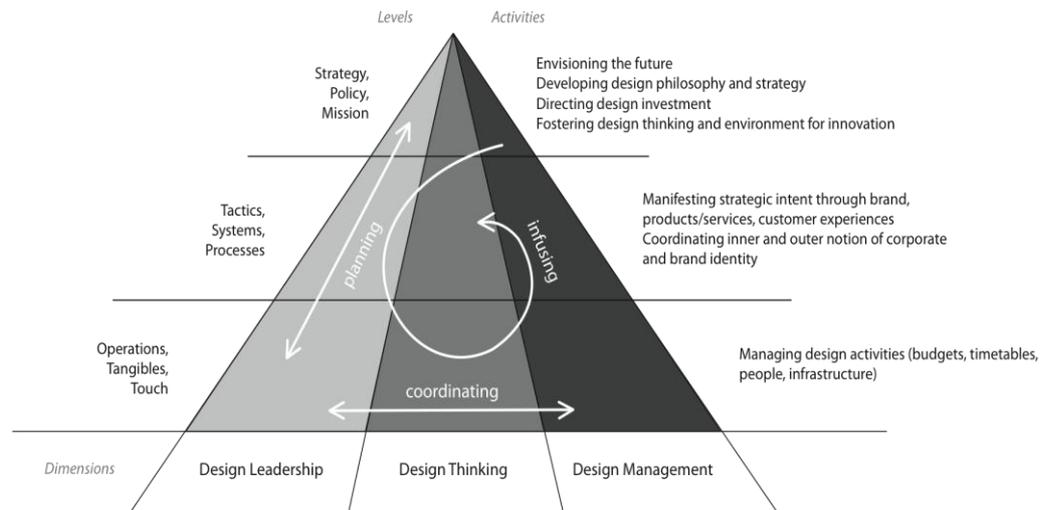


Figure 2.7 ‘Lucerne Design Management Model’ – Dimensions of Design Management in Organisations
Adapted from Acklin (2009: 1)

Based on Topalian and Turner’s (2002) view of design management, the ‘Lucerne Design Management Model’ has distinguished three dimensions of design management namely: 1) Design Leadership; 2) Design Thinking and 3) Design Management. BS7000-10 has defined ‘design thinking’ as ‘*type of process or approach primarily centred around four aspects: customer focus and intimacy, experimentation, prototyping and emotional connectedness*’ (2008:21). The reason for including design thinking was that ‘*design thinking is not a clear cut management approach, but is capable of addressing a broader system of values (Brown, 2008), design methodologies or a frame of mind that can infuse design (Mintzberg and Dumas, 1991) into an organisation’s culture.*’

The ‘Lucerne Design Management Model’ inherited the effective design management of platforms to communicate between different organisations and departments on different levels (Best, 2006; Borja de Mozota, 2003; and Topalian, 1990 in Oakley ed, 1990). In addition, this model suggested that the

implementation of design management is represented by a continuous stream of activities; namely planning, coordinating and infusing. As Acklin explained, *'These movements are expressed by a permanent exchange of information between all levels and across all functions for monitoring and decision making purposes, for managing design activities and for infusing design thinking'* (Acklin, 2009: 1).

In essence, design management is crucial for a process that creates a connection between organisations, within the organisation and also between the organisation and customer. The management of design organisation includes the establishment of a flexible organisational structure to facilitate and re-assemble the necessary resources to meet existing opportunities. This also involves the enrichment and development of the designers in order for them to play a valuable and essential role. Moreover, providing comprehensive projects to update design skills and enhance designer-focused information and knowledge are equally important. Therefore, design activities should be organised within all aspects of the system of the company.

3.3 Strategic Design Management (Design Leadership)

With the development of design management, design theory and design methodology are now being applied to areas of management and motivation. Design is growing into one of the most important means of differentiation; not only as a tool for designing products, but as a tool for designing ventures. Under the influence of an innovative and creative culture, organisations could benefit the most from new and sustainable strategic design management. Hands (2009: 94) advised that *'design champions are key drivers of change within organisation. Leadership by design can drive innovation not only within the organisation but by reaching out to partners within the extended supply chain'*. Yet, the interpretation of this term is highly ambiguous and leads to questions

such as what are design champions and how do they contribute to strategic change and business growth?

a, Leadership

Leadership research has taken different perspectives, leader traits, behaviours, and the influences of situational characteristics on leader effectiveness. In the past 20 years, transformational and charismatic leadership approaches have gained in popularity. Leadership is the *'process of influencing others towards achieving some kind of desired outcome'* (Den Hartog and Koopman, 2001). The majority of definitions of leadership reflect some basic elements, including "group" "influence" and "goal" (Bryman, 1992). Theories reflect the different ways in which leaders exercise power. They come from the assumption that leadership style directly determines the effectiveness and productivity of subordinates.

There are various views as to how leadership differs from management. Leadership is seen as a subset of managerial activities; others see leading and managing as overlapping roles, yet others describe them as different processes. For example, Kotter (1990) differentiates their intended outcomes: management seeks to produce predictability and order, while leadership aims to produce change. In Kotter's view, leaders and managers are not necessarily different persons, but rather different roles. Bennis and Nanus (1985) conclude that leaders could be differentiated from managers because *'managers are people who do things right and leaders are people who do the right things'*. Goleman (1998) suggested in *'managing with heart'* that *'leadership is not domination, but the art of persuading people to work towards a common goal'*. However, a leader that explains how long-term goals can benefit individual businesses and individuals themselves is more likely to motivate others to cooperate. Leaders have authority, some of which they can choose to delegate. For example, the execution of a clearly defined task or the making of project

decisions. Delegating authority is different to delegating responsibility (Best, 2006).

In essence, leaders have a wide-ranging, long-term perspective, a combination of professional, personal and political skills, and the ability to create and share vision and to motivate and persuade others, while looking for ways of improving existing internal systems. Whatever individual strengths they might have, all leaders influence people and therefore eventual outcomes.

b, The New Strategic Management

Designers and managers have very different characteristics in terms of thinking styles; focus; behaviour and culture (see Table 2.4, 2.5). The differences in skills and values often lead to the impression that designers are not interested in financial and strategic issues (Jevnaker, 1999; Turner, 2000). On the other hand, managers need to adapt “design attitude” to problem solving in a creative manner (Boland, 2011). However, Borja de Mozota (2003) believes design is the key to enhance innovation and new product development (NPD), in line with understanding of competitive advantage, user needs and synergy between innovation and the company’s technological strengths. Borja de Mozota (2003) further asserts that an innovative design process can help create outstanding product/services through design research.

Characteristics	Managers	Designers
Aims	Long term profits/return Survival Growth Organizational durability	Short term product/service quality Reform Prestige Career building
Focus	People Systems	Things Environment
Education	Accountancy Engineering Verbal	Crafts Art Visual
Thinking styles	Numerical Serialist Linear Analysis Problem oriented	Geometric Holist Lateral Synthesis Solution led
Behaviour	Pessimistic Adaptive	Optimistic Innovative
Culture	Conformity Cautious	Diversity Experimental

Table 2.4 Differences between Designers and Managers
Adapted from Walker (1990)

Design Concepts	Management Concepts
Design is a problem-solving activity	Management is a problem-solving process
Design is a creative activity	Management is of ideas innovation
Design is a systemic activity	Management is about information of business systems
Design is an activity of coordination	Management is about communication and structure
Design is a cultural and artistic activity	Management is about customer preference, organisation culture identity

Table 2.5 A Comparative Approach to Design and Management Concepts
Adapted from Borja de Mozota (1998)

Comprehensive analysis of a large number of empirical studies on success factors in R&D and innovation suggests that communication and cooperation are the central elements for business success, along with “*a balanced mastery of all implied factors*” (Brown, Schmied and Tarondeau, 2002). A significant part of design or decisions influencing design are not only made by designers but other people in the organisation such as engineers, programmers and managers (Cooper and Press, 1995). These ‘silent designers’ have significant impact on the design outcome. As the activities of design and innovation share

crucial elements, design takes an efficient bridging role enhancing a more cooperative environment and embracing different subjects under an “umbrella” of “silent design” (Dumas and Mintzberg, 1991). Other findings by Brown, Schmied and Tarondeau (2002) suggest that having managers with a design background on the board may have a significant impact on the innovation success rate. Thus, in strategic management, especially when it comes to markets of design-driven (Verganti, 2003) and brand-driven innovation (Abbing, 2005), design may rightfully assume a leadership role.

c, Design Leadership

In the late 1970s, the Cornfield Report suggested design management should place a greater emphasis on achieving corporate aims and objectives; later on, in the 1980s design management appeared on the corporate agenda (Hands, 2009). These early discussions on and issues raised, regarding strategic design management, are equally relevant today.

As design has established itself as a valuable and acknowledged part of a company’s sustainable competitive advantage, designers enjoy their role as “valued contributors”, or play a larger role for leading firms. Raymond Turner discussed the key difference between design management and design leadership (Best, 2006: 186): *‘Design management is about delivering successful design solution in an efficient, design leadership is about helping organisations to envision the future and to ensure design is used to turn those visions into reality’*. In other words, design leadership is more ‘proactive’ and design management is more ‘reactive’ (Hands, 2009).

Design leadership is about setting and driving ‘vision’ and taking a ‘long-term view’ rather than ‘implementation’ (Pearson, 1998). De Jong and De Hartog (2010) believe vision is a transcendent objective that represents shared values, has moral overtones, and provides meaning; it reflects what the organisation’s

future could and should be. However, in 2002, Topalian and Turner suggested that core factors of design leadership involve five aspects: Clarification, Definition, Demonstration, Development and Realisation (Topalian and Turner, 2002; Hands, 2009). Hands (2009) further discussed the key elements that design leadership should entail. He provides six points to explain the abilities and benefits of successfully incorporating design leadership into organisations. They are shown in Table 2.6.

Design Leadership	Benefits of successfully incorporating design leadership into organisations:
Signposting the future	Enabling the organisation to plan and drive future growth
Take the organisation on Superhighways	Design strategic development is the most effective and sustainable way for an organisation
Exploration and inspiration	Making sense of intangible aspirations and transforming long-held perceptions of what the future could hold
As alchemists	Combine intuition, empathy, creativity and inspirational leadership with ability to understand day to day practical business considerations, and turning aspirations into reality
Experience of engagement	Convey intangibles to the customer and manifest in all aspects of customer engagement with the organisation
Fostering a culture of creativity	Best suited to achieving cultural transformation

Table 2.6 The Abilities and Benefits of Successfully Incorporating Design Leadership into Organisations

3.4 Managing Design in Strengthening Cultural impacts on Innovation, Creativity and Management Style

A number of studies have revealed a correlation between competitiveness, innovation capability and the use of design at both strategic and operational levels. The Global Competitiveness Report Survey (2003) identified a correlation between the competitiveness of a nation and its design ranking; 24 of the 25 nations rank design as the most important element of competitiveness. The Cox Review (2005) discussed the needs for creativity, innovation and design under the context of global economy. Cox believes *'Design is what*

links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end.' In other words, design drives innovation as a competitive advantage. Cox further indicated the need for '*... business awareness of how creativity can boost performance ... by creating more demand for creativity and design through business support services and government incentives*'. Ackin and Hugentobler (2007) suggested that as the path to new products and services, creativity is the route to greater productivity. In practice, greater creativity is a key to greater productivity, whether by way of higher-value products and services, better processes, more effective marketing, simpler structures or better use of people's skills.

3.4.1 Exploring Innovation and Creativity as a Strategic Business Process

Innovation and creativity have become very popular terms both in public policy and the business community. In particular, the concept can be related to a set of strategic responses to competition and globalisation in the public and private sectors (Potter, 1990; DTI 1999; Jeffcutt and Pratt, 2002; Tether, 2005). For example, innovation has been defined in different forms: as new ideas; process of doing things; transformation of an idea into a product/service; or employment of design or construction techniques, or materials (BS 7000-10). There are few definitions for words such as innovation and creativity, but there are many interpretations of them. An analogy to distinguish between the two is: if innovation is about designing a better mousetrap then creativity is about devising an entirely new approach to rodent control (Higgins, 1994).

Innovation carries with it the implication of managed evolution and of added value but also of derivation from or adaptation of an earlier idea; whereas, creativity implies novelty, producing something that did not exist before – it does not necessarily imply that what is created is better (Parkinson, 1999).

Therefore, the test for innovation and creativity is lodged in successful delivery of ideas, not just in their origination.

Much of the literature on innovation concerns innovations which involve the advancement of the technical or technological frontier (of the firm, industry or country). Therefore innovation involves technical or technological novelty. However, not all innovations involve technical novelty, and are instead based on novel designs or concepts (Tether, 2005). Verganti (2003) offers a radical conceptualisation of ‘design driven innovations’. Verganti associates with functions in contrast to technologies; he sees design as the ‘brokering of languages’. Alongside the familiar ‘technology push’ and ‘market pull’ models of innovation, Verganti proposes ‘design push’, in which it is language (and new meanings) that are pushed, as opposed to technologies (and new functions). He states (Tether, 2005:9): *‘We may define design driven innovation as an innovation where novelty of message and design language is significant and prevalent compared to novelty of functionality and technology’*.

Creativity can be seen as a part of innovative behaviour that is most evident in the first phase of the innovation process, where problems or performance gaps are recognised and ideas are generated in response to a perceived need for innovation (West, 2002). The Cox Review (2005) defines creativity as *‘the generation of new ideas – either new ways of looking at existing problems, or of seeing new opportunities, perhaps by exploiting emerging technologies or changes in markets’*. The review also defines innovation as *‘the successful exploitation of new ideas. It is the process that carries them through to new products, new services, and new ways of running the business or even new ways of doing businesses’*.

Amabile (1998) concluded that creativity is a function of three components: expertise, creative-thinking skills, and motivation (see Figure 2.8). Expertise is knowledge – technical, procedural and intellectual. Creative thinking skills

determine how flexibly and imaginatively people solve problems. Motivation is an inner passion to approach the problem at hand leading to solutions far more creative than external rewards.

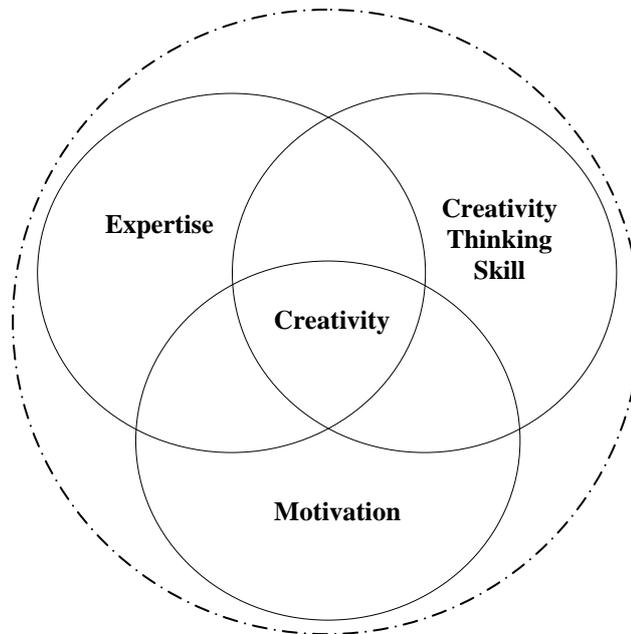


Figure 2.8 The Components of Creativity
Amabile (1998:78)

Nevertheless, innovation and creativity as capabilities are not discipline confined. They have relevance to most human activities (Parkinson, 1999) and are attributed as ‘essential’ characteristics in the design field.

a, Managing Creativity within Business Context

In the business context, creativity has been explored from many different perspectives, particularly in management literature, and there are also proxies – such as in the creative industries, to assess national performance. The DTI (2005) define creativity as the production of new ideas that are fit for a

particular business purpose. This means creativity as the first stage in innovation. Creativity has a role in enhancing all aspects of business performance – from the design of new products and services to their production, marketing and distribution. Jeffcutt and Pratt (2002: 225) further suggested that *‘Competitiveness can be maintained through innovation in products and services. Plainly, innovation relies upon ‘creativity’- as the creation of novel products and services’*. And, as it will, logically, creativity leads to endogenous growth. The Cox Review (2005), and the subsequent Green Paper by the Work Foundation (2007) *Staying Ahead: the Competitive Position of the UK Creative Industries*, both highlight the untapped potential of many creative businesses, identifying lack of succession planning and sound business management understanding as the principle reasons for failure to grow beyond the first generation of founders. *‘The uncontrollable desire to excel creatively means these businesses over invest in their creative output and under negotiate the financial return from almost every contract’* (Sadowska and Hull, 2008:5). One possible route suggested by Piore and Sable (1984) was to adopt flexible specialisation strategies that placed emphasis upon a *‘loose network of small producers that could mix and match skills and expertise to produce short runs of new products (services) of high quality at short notice’*.

Therefore, these various definitions of creativity seem to announce that creativity includes the in-depth thought of a subject and an ability to produce new and different viewpoints. In other words, creativity is an ability to come up with new and different approaches and can be considered as a power tool to enhance all business performance.

b, Organisational Creativity

With creativity, a critical condition should be noted that new ideas require a context which may be nurtured, developed and passed on, or made into something more generally useful (Lundvall and Johnson, 1992; Morgan 1995).

That is, creativity requires a context and organisation. As Jeffcutt and Pratt (2002: 225) believe '*Creativity is a process, which requires knowledge, networks and technologies that interconnect novel ideas and contexts*'.

Organisational creativity has considerable importance for economies and for increasing organisational competitiveness in the rapidly changing global economy. Barron (1988) suggested that creativity is an important resource which exists in organisations; meanwhile organisations have to try to make use of this resource by devising settings which permit creative talents to thrive. The major organisational factors that enhance creativity in a work environment are:

Organisational climate. This is concerned with "atmosphere" or "mood" (Morgan, 1995). A "working atmosphere" favourable to creativity and innovation requires participation and freedom of expression, but also demands performance standards (Bower, 1965).

Leadership style in organisations (Stogdill, 1974; Misumi, 1985; Cohen et al., 1996); Bowen and Fry suggest that creativity is often inhibited by practices and procedures, the leader's vision is therefore a key factor when managing creative individuals (Lock and Kirkpatrick, 1995). This vision must be communicated from the highest to the lowest levels of management (Delbecq and Mills, 1985).

Moreover, other major organisational factors that enhance creativity in a work environment include structure and system of organisation (Barefield and Young, 1998); manufacturing practices (Young, 1992); training and modelling techniques, resources, and skills (Manz and Sims, 1986). Furthermore, there are theories of motivation, creativity, the contributions of individual or organisational groups and a myriad of other social phenomena, such as, cultural environment, in which creative activity is channelled through certain domains, social groups, and characteristic ways of approaching the world.

3.4.2 Cultural Role in Creativity

In the last section (3.4.1), creativity as a strategic business process has been explored. It is suggested that creative products such as a painting are often tangible objects, yet creativity can also occur in ideas, leadership or other intangibles. However, Amabile (1983) proposes that *'creativity is, to a large extent, a social judgement'*. For instance, Lubart (1990: 35) defined that *'the emotional, personal, and intra-psychic elements dominate the oriental view of the creative process'*. A large number of empirical studies on success factors in culture and creativity suggest that level of creativity permitted on a topic is inversely related to the topic's role in the maintenance of deep culture issues (Lubart, 1990; Constantine, 2001; Martins and Terblanche, 2003; HMIE, 2006). In other words, culture is hypothesised to differ in the content to which it embodies creativity-enhancing features. However, studies in Spindlers, 1983; Pervaiz, 1998; HMIE, 2006; DCAL, DE, DETI, DHFETE, 2004; and Learning and Teaching Scotland/IDES Network (2004) also provide a 'world-view' that culture can enhance creativity when it empowers individuals to work towards the future.

Components such as history, humanity, cultural heritage and social-economic development can be readily found in the cultural designs of each country (Ashton and Deng, 2006). However, design strategies in business have never been so important. The main concern of those who manage or develop design is the way in which their company can best convey the right image for their products or services in the vastly different cultures that make up the global market place (Norton, 1999). From a designer's perspective, for instance, the challenge is to understand the template and the role of culture in determining the place and use of any product/services in that person's world (Malloy and Gazzola, 2006; Costa, 1992). Some design professionals suggest that designers should "think globally but act locally"-- the corporate level gives strategic direction; local units focus on the unique consumer differences (Kotler, 1998).

In order to represent the company effectively, the information that must be known should be valued by the culture that the study wishes to address. In short, a strategic approach must be taken to cultural characteristics explored (Norton, 1999), such as:

- Information processing: Different cultures have different responses to manipulating controls (Courtney, 1994). Important areas within information processing are the Knowing, Thinking and Learning (e.g. language, memory, problem solving and decision- making), and the sensation and perception areas (e.g. visual, auditory and tactile processing of signals, signs, icons, displays and controls on a product or service) (Hougan, 2001; Malloy and Gazzola, 2006).
- Aesthetics. These primarily deal with the emotion and opinions of the users that translate into product/service appearance (Hougan, 2001; Malloy and Gazzola, 2006).
- Patterns of use, which relates to how cultures perceive product/service as something valuable; and aesthetics in the global context (Hougan, 2001; Malloy and Gazzola, 2006).

To summarise, creativity emerges through an interaction of a person with a culture. Culture defines the nature of creativity and creative process, promotes certain forms and domains as creative, and regulates the general level of creativity. More importantly, not all nations have responded to creativity in the same way because of the specificities of national history, politics, culture and economy. For example, Lubart (1990) suggested that the predominant ‘western’ definition of creativity as product –oriented, differed with the ‘eastern’ view of creativity as a self-growth process. In short, Culture provides a set of facilitating and inhibiting conditions for creativity. As such, the influence of the cultural environment will be examined in this comparative

research study and cross-culture analysis will be undertaken in the field of design management implementation to broaden our perspective on creativity.

3.4.3 Cultural Influences on Management Practices

Hofstede (2001: 9) refers to culture as *'the collective programming of the mind which distinguishes the members of one group or category of people from another'*. He completed one of the earliest and most significant studies of management styles as they relate to different cultural traits and his model has been extensively used and applied in international management. Furthermore Hofstede's dimensional framework of culture is widely accepted in marketing and other international business disciplines (Nakata and Sivakumar, 2001). The framework was later expanded to five dimensions (Bond et al., 1987); they are: uncertainty avoidance, individualism--collectivism, masculinity--femininity, power distance, and long-term orientation. These dimensions largely account for cross-cultural differences in people's values, beliefs, and behavior patterns worldwide (Hofstede, 2001). Considerable empirical support for these dimensions has been established in study extensions and replications (Hofstede, 2001; Hoppe, 1990; Nakata and Sivakumar, 2001; Sondergaard, 1994).

a, The Concept of Organisational Culture

Hofstede (1991) divided the meaning of organisational culture into practice. He suggested that the value aspects of organisational culture are determined by national culture; the practice aspects are determined by the organisation, which change to adapt to environmental demands. Moreover, researchers use social comparison theory to reinforce the idea of cultural compatibility (Cullen, 2002). More recent work has sought to develop a perceived cultural compatibility index, acknowledging that differences in beliefs exist between perception and reality (Veiga et al., 2000).

It has also been argued that culture nurtures the development of corporate culture in organisations, and in turn they correlate with each other. Burrill and Ledolter (1999: 298) regard culture as *'a set of values and patterns of behaviour that focus on customers, quality, and individuals of the organisation'*. Tse (1998) advocates an 'onion' concept of culture, with the core being the value systems, which emphasise what is perceived as right and wrong, and how things are prioritised. Yip (1992: 181) argues that culture *'comprises the values and unwritten rules that guide behaviour in a corporation'*.

Burrill and Ledolter (1999) argue that culture shapes organisational structure as it also determines the flow of information, the patterns of behaviour, the reward systems and other aspects of the organisation that make it possible to serve customers; in addition, it is advocated as a tool in determining organisational performance (Sinclair and Collins, 1994). Chu (1997) describes culture as being invisible and intangible software in a company, which distinguishes one organisation from another. According to Liberatore (1993), corporate culture resists change because it is so established and ingrained, and any attempt to change the culture may declare war on the systems. BS 7000-10 defines company culture as *'company's shared values and behaviours that determine what is valued and what is acceptable'* (2008:10). Nevertheless, corporate culture might need to be changed in order to facilitate new ways of thinking and doing business in today's dynamic market-place (Pun, 2001).

By recognising the existence of these differences, one can begin to determine the consequences for inter-organisational relationships as perceived cultural compatibility in cannot be divorced from the national context (Hofstede, 2001; Veiga et al., 2000). This national context is the hallmark of Hofstede's work on the importance of culture to organisations. Based on social comparison theory, he argued that the value systems within our societies shape our behaviours and cannot be divorced from our views of the world (Hofstede, 1997).

b, Influences of Chinese Culture on Management Practices Comparable to the West

According to Pun, Western (based on Anglo-American) and Chinese cultural are very different; both exhibiting their own influences and highly respected and powerful idealistic systems (Pun, 2001). Tse (1998) argues that no system is perfect and each has its defects. Westerners tend to develop a theoretical and methodological model before implementation, while Chinese extract the essential features of a given philosophy but are flexible in their applications (Chen and Lu, 1998). Chinese managers tend to adapt to a specific environment while westerners prefer to control all aspects of the work environment (Pun, 2001). Table 2.7 provides a further contrasting comparison of the Anglo-American and Chinese cultures.

Anglo-American culture	Chinese culture
Rational	Intuitive
Inductive thinking	Holistic thinking
Scientific	Aesthetic
Individualistic	Collectivistic (family-oriented)
Low power distance	High power distance
Seek to reduce uncertainty	Accept or tolerate uncertainty
Explicit communications	Implicit communication
Function-oriented expression	Relationship-oriented expression
Systematic trust	Personal trust
Diversified information networks	Top-down information system

Sources: Based on Hofstede and Bond (1988) and Martinsons (1994, 1996).

Table 2.7 Contrasting Western (based on Anglo-American) and Chinese Cultures Pu (2001:329)

In comparing the Chinese way of doing business with western methodologies, many researchers and practitioners believe that human relations are of crucial importance in the Chinese business world (Wong, 1996; Xin and Pearce, 1996; Yang, 1994). With 5000 years history, Chinese cultural values have strongly influenced Chinese management systems, and centralised authority, hierarchical structures as well as informal co-ordination and control mechanisms prevail in both Chinese government and business (Chen, 1995;

Martinson and Hempel, 1995). Ng (1998) argues that large power distance still remains an outstanding feature of Chinese management. They may conform to certain transactional business procedures or requirements of the west, but the social processes and relationships through which managers function are likely to remain Chinese for some time (Pun, 2001). For example, according to Ng (1998), traditional Chinese people believe that it is the duty of a benevolent leader to treat all people fairly and to provide them with order and stability. Consequently, many Chinese organisations today are still regarded as highly formalised and bureaucratic. They are characterised by a tight set of business rules, and also close supervision of the workforce. Hence, Pun's study (2001), suggested that it would be problematic for many Chinese enterprises to readily adopt a western approach to management.

In terms of cultural influences on knowledge management practice, Tong and Mitra (2009) argued that a series of factors derived from Chinese culture such as hierarchy consciousness, fear of losing face, a sense of modesty, competitiveness and a preference for face-to-face communication, can act as barriers to knowledge management initiatives within Chinese manufacturing organisations. However, the study also suggested that employees in Chinese enterprises like to keep their knowledge implicit and are willing to share it informally.

3.5 Chapter Summary

In this chapter (Chapter 3), a literature view on existing theories of design management has been conducted and the essential factors in design management identified. Topics have focused on: 1) Managing design in organisational dynamics; 2) Design leadership; and 3) Managing design in strengthening cultural impacts on innovation, creativity and management style.

The review has supported the notion that:

- Design management should be based on a "cultural form". And design should play an important part in a diversified business culture. It should also be an important strategic tool leading to business success.
- When business organisations pay attention to the commercial value of design, organising and planning design projects become the effective channels through which "design value" is embodied. Furthermore, the trend in support of "design in business practices" has its advantages; however it might limit the design skills in favour of creativity and the product itself.
- Design management should be used as a factor in the success of innovative design. Success in design innovation insists on the need for management support, which is not specific to innovation, but universal for any change in management (Coughlan and Porkopoff, 2004).
- In order to represent design management effectively, the information that must be known should be valued by the culture, a strategic approach must be taken to cultural influences at management practice level.

The next chapter (Chapter 4), will explore the essential issues of DME.

Chapter 4:

Postgraduate Design Management Education

This is the 3rd of three chapters presenting the research context.

In terms of postgraduate design management education (Pg DME), which is the research study's main concern, a broad scope of knowledge and skills to comply with different circumstances need to be provided in the context of 'design management study'.

Therefore, this chapter will explore the essential issues around Pg DME; and a discussion on the following topics will be undertaken:

- The role of HE in economic growth;
- Implications for Pg DME;
- Pg DME curriculum and skills development; and
- Teaching & learning strategies discussions.

Figure 2.9 outlines of Chapter 4.

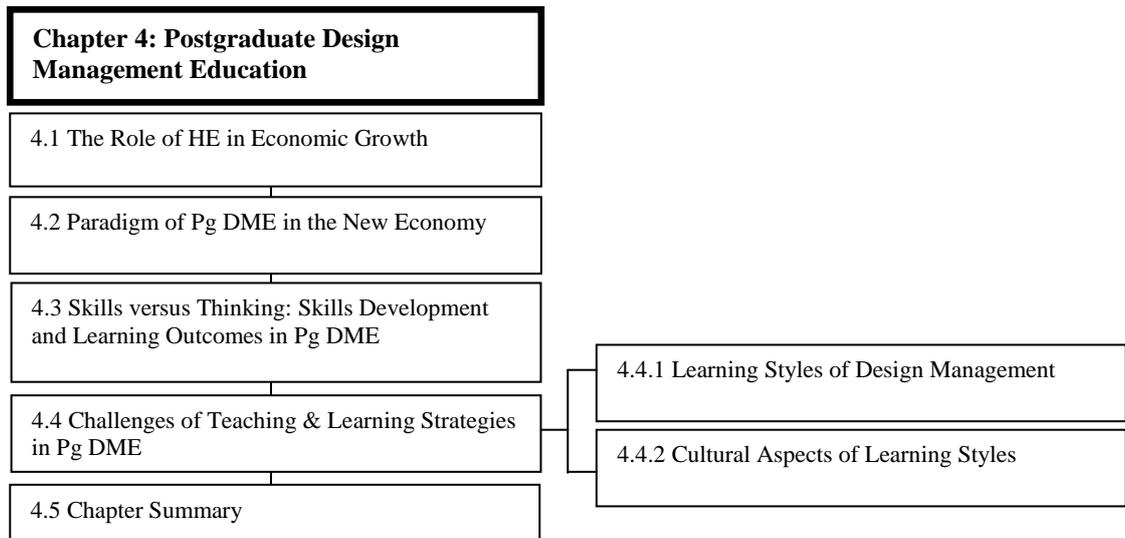


Figure 2.9 Chapter Map: Postgraduate Design Management Education (Pg DME)

4.1 The Role of HE in Economic Growth

Defined as a knowledge and idea-based economy, “*the ‘New Economy’ is an environment where the keys to job creation and higher standards of living are innovative ideas and technology embedded in services and manufactured products*” (Festervand and Lumpkin, 2005:13). As one of the purposes of the ‘New Economy’ is the creation and transfer of knowledge, HE undoubtedly occupies an integral role in the ‘New Economy’’s evolution.

A survey in 2008-09 carried out by HEFCE (2010/14), reported that significant support for a growing innovation economy, with income from knowledge exchange activity between UK universities and colleges, business and other users had increased by 35% over the last decade (from £2.28 billion in 2003-04 to £3.09 billion in 2010-11). The ‘New Economy’ has unquestionably changed the nature of knowledge, and is currently restructuring HE, research and learning.

As a result of an increasing number of students HE institutions are establishing new missions and innovative configurations of training, in order to serve more diverse populations. HEIs are also required to improve their administrative efficiency and accountability in response to the demands of different stakeholders such as government, business, industry, and labour organisations, students and parents. Therefore, developing a programme and delivering or acquiring new skills becomes the responsibility and opportunity of both the academic institutions and students.

To meet the challenges, the first task for HE is the absolute necessity of identifying and responding to a series of new educational requirements, as *'institutions of higher learning must redefine the educational product, as well as the requirements/opportunities by which higher education will be delivered'* (Richards-Wilson, 2002:296). In other words, HE has to adapt to new technologies, new environments and at an increasingly rapid pace. Festervand and Lumpkin (2005:25) suggested that *'course /programme delivery will become increasingly multidimensional, and curriculum content will be subject to greater specificity and perpetual redesign'*. More specifically, new educational requirements will be considered in terms of if and how trends in the 'new environment' have impacted or will impact the demand for skills delivered, modes of delivery, educational relationships, and leadership roles, as well as other opportunities and challenges associated with HE globally. Responding to these needs/opportunities will demand that new educational alliances be created.

While applicable to all levels of HE provision, these prognoses portend profound change particularly for postgraduate education; the reason for this research study focusing on postgraduate level study in design management. Festervand and Lumpkin (2005) further suggested that at least three major changes/opportunities for universities, postgraduate programmes, and students exist as a direct impact of the 'New Economy':

- Focus on the role/impact of technology in the delivery of HE;
- Focus appears to be a far more active role internationally. This requires a significantly expanded and culture specific set of skills;
- Adoption of the philosophy of “life-long learning”. Both educators and the educated require continuous change to enhance future opportunities.

4.2 Paradigm of Pg DME in the New Economy

Design management as a discipline is now fully established in academic programmes worldwide. Schools in Europe and the UK took the lead and the US followed. Most significantly, due to the development of design management discipline, designers’ abilities are able to be harnessed through flexible and more informal models of management, thus creating the business for design-driven innovation. The new model is based on concepts such as customer-driven management, project-based management, and total quality management, which all deal with design. Managing design takes various forms such as: new insights in technology and its human relevance; new understanding of designers, managers and user interaction; new visions of living, learning, working and playing; and new ways of thinking about business goals and structures.

As to why the practice of design management has to be collaborative, design management often involves an advanced and wide-range of knowledge from many different disciplines such as engineering, physical and social sciences, humanities and arts, industrial design and human factors. For example, postgraduate study in design management in the US is currently defined to include finance, accounting, marketing, international business, strategic technology, innovation and business strategy, as well as intellectual property and contract law, design operations management, new product development, and design futures. McBride (2007) suggested as a discipline, design

management has nested within management science, and emphasises the influence of the ‘new economy’. Furthermore, the value of design management in an economic context that includes disruptive climate factors and resource scarcity is becoming more pronounced.

Therefore, this necessitates drawing upon multiple sources of expertise. Experience in collaborative interdisciplinary learning is an important part of the core curriculum in design management. For such experience, the more relevant complements to design education are business, engineering and social sciences (Nirma, 2001). Unifying these four disciplines is undoubtedly a taxing endeavour. In traditional educational institutions, these disciplines have distinctive identities and remain mutually distant. However, three of these disciplines- design, business and engineering, do share a common interest in innovation and creativity (see Figure 2.10).

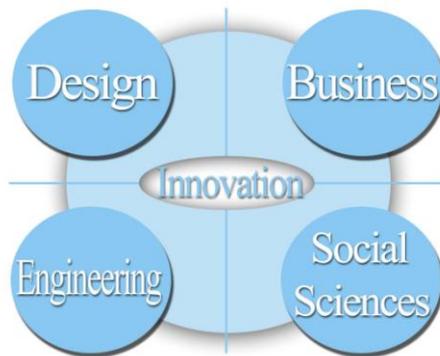


Figure 2.10 Distinct but Interdependent Disciplines

Nirma (2001)

Curriculum covers course content and, increasingly in the UK, is required by government and/or professional bodies, to include subjects which are considered core to the subject area and generic areas desirable in all degree programmes. The design management curriculum model became a generic

framework for universities to customise in respect of their specific contexts. Nevertheless, in the case of design management, and mirroring early debates around a definition of the discipline, there are likely to be differences in curricula within universities and institutions. Although there have been attempts to co-ordinate or at least compare curricula, this has never happened. There have been several key papers published in recent years which have attempted to draw together what might be described as a core curriculum (Borja De Mozota, 2003; Design Management Journal, 1998 and 2002). The teaching model covers topics such as: design in an economic and business context; the nature of design work; design strategies (*chosen path formulated to achieve business and design objectives, supported by an indication of how resources will be committed*, BS 7000-10, 2008:21); design policy (*general rule relating to design discipline within an organization*, BS 7000-10, 2008:19) making; researching design and product requirements; managing design projects; evaluating design results and legalities impacting design (Borja De Mozota, 2003; CNA 1984; and Kyung, 1998). Design management has attempted to meet these specific national needs within particular organisational structures. As such, over the years, the paradigm shift of design management from “studio-based” or “project-based” to “process based” and “knowledge-based” is changing the context of both education and the profession (Borja De Mozota, and Dong, 2010).

4.3 Skills versus Thinking: Skills Development and Learning Outcomes in Pg DME

In 1998 (vol.9, no3. Summer1998), an article in the Design Management Journal titled “18 views on the Definition of Design Management”, suggested the views exchanged within were critical to establishing a design management discipline. The skills which should be developed and nurtured, with a view to developing future, design management professionals have been summarised and formed to include the following traits (McBride, 2007: 18); being able to:

- *Demonstrate proficiency in expressing the organisation's resources and assets;*
- *Initiate and handle strategic decisions from boardroom to showroom;*
- *Be vision[ary], strategic, profound, practical and compelling;*
- *Understand global markets and brand equity in those markets;*
- *Exhibit competence in strategic thinking and out-of-the-box thinking.*

Cooper and Press (1995) argue that being a design manager is about *'the response of individuals to the needs of their business and contribution they can make to enable design to be used effectively'*. Jerrard and Hands (2002) suggest effective design management involves good communication between different organisational departments. Information appropriate to the design programme needs to be provided by production, finance, marketing and sales; from project inception to its successful completion. Topalian (1980a) criticised the Corfield report which stated that *'having designers on company boards may well be step in the right direction; however, the design professions should concentrate instead on a more sensible approach'*. He suggests designers and managers improve their respective roles whilst increasing the sensitivity and understanding between them. Briggs also suggests a competent design manager must have good communication skills, both written and verbal. Furthermore, teamwork; knowledge of basic business accounting and the ability to think strategically and design training are very important. She commented that *"Where they are necessary is in understanding the design process and functioning as a translator or facilitator between both camps, not only demonstrate their design "thinking" skills, but managing creative processes well"* (Green, Briggs and Lombardi, 1998:19).

To conclude, the 'job description' of 'design manager' as similar to but different from either designer or manager began to emerge. On one hand, a

design manager should take risks on how to communicate with designers. Design management can be considered to be the bridge between designers and non-designers, which will increase the value and contribution of designers, design elements and design thinking for business development. On the other, most business managers are too busy driving business operations and they do not always have time to develop proposals for bringing design thinking into projects. In this situation, design managers can facilitate process; they can do things to ensure that design policies and procedures are in place, and that a variety of different design skills are used in the project.

In terms of DME, therefore, a summary of the above view suggests there are a number of critical elements that a design management postgraduate course study needs to provide to further equip design managers with the required skills (Lombardi, 2007; Turner, 2000):

Firstly, it is design skills, as designers need to be seen as design professionals. Secondly, is the knowledge of human dynamics and basic business practice. In order to build and manage an effective team of design professionals, design managers need to understand what motivates them and manage the tools needed to manifest those features. In particular they manage (Turner, 2000):

- Design work, the relevance and quality of it;
- Design people, which include designers, internal clients, suppliers, the wider business audience and other stakeholders;
- Design budgets, for resources within and outside the company;
- Design timetables, from design concepts to delivery; and
- Design management infrastructure, using and modifying it so that it efficiently affects decision making.

In essence, Pg DME must include a significant course of study in interpersonal skills and human dynamics and a general creative education with a focus on advanced design principles. Design management has also been positioned within a broader conversation to include (McBride, 2007:19):

- *Asset management skills that could apply limited resources toward the realisation of strategic goals;*
- *Leadership, renewal and reinvention.*

However, professional and industrial practice is changing rapidly, a contributory factor to the difficulties in matching the technological strands of design management provision to the perceived needs of employers. The role of ‘design manager’ is in transition and the following issues have impinged on the review.

- From the design profession point of view, industries are discovering “design thinking” to mean inventing , testing , developing and redeveloping designers via an iterative process involving the definition of a brief and definition of a problem, research into both the users/customers and markers/organisation’s requirement, and as prototyping or modelling partial/ potential solutions and multiple feedback loops. What is valued is this iterative, prototype view of the creative process. Moreover *‘It is first these designers’ skills that are required: foresight, tends, the abilities to transfer knowledge from other fields and anilities to anticipate and imagine...’* (Borja De Mozota and Dong, 2010:368).
- On the other hand, from the management point of view, Borja De Mozota argues that management does not need more design processes, but more creative organisations; comprising technology, function and culture. Managers understand that the design process

should not be limited to creativity, but that it should be linked with strategy formulation and research on the environment. Designers' skills are then valued at the organisation's frontier as a horizontal competency in vertical "silos" organisations (Borja De Mozota and Dong, 2010).

4.4 Challenges of Teaching & Learning Strategies in Pg DME

4.4.1 Learning Styles of Design Management

Different traditions within education will lead to culturally specific norms for teaching and learning. For instance, HE in the UK in the 1990s, made considerable efforts to understand and highlight aspects of teaching and learning rather than regarding course as a structure to 'stuff' students with facts. The role of particular teaching strategies and learning styles were presented as the means by which skills could be acquired and there was a move away from directive teaching towards student-centred learning. The most common form of student-centred learning is to create assignments and activities that require student input to presumably increase the likelihood of students being motivated to learn (Gallow, 2011).

Student-centred Learning is one of the primary features of PBL. *"Student-centred" refers to learning opportunities that are relevant to the students, the goals of which are at least partly determined by the students themselves'* (Gallow, 2011). However, this does not mean that tutors abdicate their authority for making judgments regarding what might be important for students to learn; rather, this feature places partial and explicit responsibility on the students themselves for their own learning.

PBL is a student-centred pedagogy to enhance content knowledge while simultaneously fostering the development of communication, problem-solving, and self-directed learning skills, in which students learn about a subject in the

context of complex, multifaceted, and realistic problems. Working in groups, students identify what they already know, what they need to know, and how and where to access new information that may lead to resolution of the problem. The role of the instructor is that of facilitator of learning who provides appropriate scaffolding of that process by, for example, asking probing questions, providing appropriate resources, and leading class discussions, as well as designing student assessments. Characteristics of PBL are (Mason, 2003):

- Learning is driven by challenging, open-ended, defined and structured problems.
- Students generally work in collaborative groups.
- Teachers take on the role of “facilitators” of learning.

PBL may position students in a simulated real world of work and professional context which involves policy, process, and ethical problems that will need to be understood and resolved to achieve an outcome. By working through a combination of learning strategies to discover the nature of a problem, understanding the constraints and options to its resolution, defining the input variables, and understanding the viewpoints involved, students learn to negotiate the complex sociological nature of the problem and how competing resolutions may inform decision-making (Hunter and Tan, 2005; Mason, 2003).

Margetson (1994) acknowledges that PBL requires highly structured knowledge acquisition in the context of problem-solving which motivates the learner. Some link PBL with learning from experience as the learning is derived from the process of working on the particular problem. This puts an emphasis on how learners’ process experience based on the theory that action follows thought.

Design management teaching and learning, it was argued, had already implemented such strategies (Ashton, 1995). However, Successful participation in problem, project or experiential learning requires particular kinds of learning styles. Action/reflection modes of learning prevail in this kind of educational environment and individuals who have experienced a consistent diet of this kind of teaching strategy tend to amend their preferred learning style to that which achieves success in that environment.

However, learning styles are sensitive not only to the prevailing educational diet of individuals but also other cultural aspects.

4.4.2 Cultural Aspects of Learning Styles

There is a growing body of research dealing with the cultural aspects of learning styles, strategies and learning conceptualisations of Asian students and the Chinese, in particular. However, these studies' findings are split into two relatively distinct camps. The first camp,, Hall (1976), Hofstede (1980 and 1991) and Kaplan (1966)suggest that there is an 'essential nature' to be discovered and approach research in such terms (Cortazzi and Jin, 1997; Flowerdew and Miller, 1995; Hu, 2002; Wong, 2004). The second camp does not defer to such hypotheses and are critical of the acceptance of their conclusions (Guest, 2002 and 2006; Kubota 1999 and 2001; Littlewood, 2000; Pennycook 1998; Scollon and Scollon, 1995; Zamel, 1997). In light of this research dichotomy, this section sets out to explore the origin and describes their significance to the research questions in this thesis.

a, Historical Perspectives on the Cultural Aspects of Learning

In studies pertaining to the learning styles of Chinese learners, there are a small number of social scientists and cultural anthropologists which have been instrumental in the development of an understanding of the cultural aspects of

learning. The works of Hall, Kaplan and Hofstede (1979), have been a source of inspiration for later researchers.

Hall's cultural philosophy based largely on the division of cultures into 'high' and 'low context', suggested that different cultures ascribed meaning in ways more readily understood by members of the same group. For example, Hall described China as being a 'high context' culture, which stressed the importance of non-verbal, non-explicit forms of meaning and suggested that 'register' was a particularly important feature in discourse procedures. Kaplan (1966: 14) also considered that there were features unique to individual culture, as it was termed, and placed great emphasis on an understanding of successful communication. Hofstede (1980; 1991) believed that culture could be assigned a different category; and defined definitions of cultural differences in both a quantitative and qualitative manner (also see 3.4.3). However, his theory was never intended to be applied to classroom learning. He accepted that culture was never to be viewed as a rigid construct, preferring to view it as a phenomenon based on a more flexible continuum. Moreover, Barnlund (1989: 167) suggests that: *'there may be a substantial gap between cultural clichés and realities'*.

b, A more Critical Stance: Confucianism Critiqued

Bennett (2004: 3) suggests that *'there are certain cultural predispositions, which hinder / promote engagement with a particular learning environment'*. The student-centred approach to learning in UK HEIs, for example, where ideas which underpin the concepts of 'PBL' are prevalent, may be novel for many overseas students brought up in an entirely different environment. These 'new' ways of doing things are said to contrast dramatically with teaching and learning constructs in other parts of the globe and make it extremely difficult for students to engage in the learning process. Studies carried out by Hu (2002)

support these assumptions and he maintains that such ideology is in direct conflict with a Confucian style of learning.

Many other adherents also believe, in line with Kaplan (1966), that students from Asia, educated in Confucian-style learning habits almost certainly employ different rhetorical discourse patterns to their western counterparts (Flowerdew, 1998; Liu 1998). Confucianism is regularly presented as a primary factor in explaining differences between the learning styles of eastern and western students. The most commonly held traits alluded to in the literature are more often than not couched in western terms and include: obedience and deference (Cortazzi and Jin, 1996), passivity and reticence (Flowerdew and Miller, 1995), uncriticality, and an inability to work autonomously (Ho and Crookall, 1995).

The Chinese tradition is accepted by Cortazzi and Jin (1996: 179), who base their assumptions on Chinese students' reticence. Rather than looking at a classroom as a cultural entity in its own right, made up of a group of highly individual learners, they prefer to look at students from a national cultural standpoint, which suggests that: *'Consciousness and recognition of teacher authority has been a significant aspect of Chinese traditional values since Confucius and a strong element in Chinese approaches to learning.'*

However, this is not the view of a number of commentators who suggest that student-centred learning is not alien to Confucianism. Ellis (1996: 57) believes that quoting Confucian proverbs may go some way to dispelling any trepidation, if any, the students may have. Simply by employing the maxim *'If you give a man a fish you can feed him for one day, but if you teach him how to fish, you can feed him for a lifetime'* may encourage student engagement. This is also challenged by Cheng (2000: 438) who believes that Confucius actively downplayed the teacher's authority suggesting that s/he does not have to be

more knowledgeable than the pupil. Rather, Confucius encouraged pupils to ask questions of their peers and teacher.

c, Learning Context Considerations: Classroom and Academic Culture

Learning styles are best described as situated responses to the workings of highly dynamic and fluid communities (Zamel, 1997: 341). Students are likely to exhibit a plurality of culture in which they are constantly accepting, adapting and rejecting roles within the classroom. As Bowers (1987: 8-9) suggests, it is *'a microcosm, which, for all its universal magisterial conventions, reflects in fundamental social terms the world that lies outside the window'*. However, it must be concerned that what actually takes place in a learning context and what techniques could be utilised by the teacher to facilitate this learning.

Different teaching methodologies undoubtedly entail different student roles within a classroom setting. Klingelfuss (2009) argues that if Asian students do adopt more passive classroom attitudes, it is likely to be as a result of the educational context provided for them than of any inherent dispositions of the students themselves. In more teacher-centred classrooms, often ascribed to many in the east, they are unlikely to be anything other than passive and reticent. With a less teacher-centred approach however, the classes are likely to be very different. More interactive and experiential ways of learning may be alien concepts, but it does not necessarily mean that they will be rejected (Littlewood, 2000: 33). Neither does it mean they will disempower or disenfranchise the student. Asian students are far from reticent, if given the opportunity to participate (Klingelfuss, 2009).

In essence, as more critical literature suggests, learning behaviours are the result of a complex interface between any number of social, cultural, economic, institutional and individual factors. It is almost impossible to isolate culture as the sole variant in a study of learning interaction. In short, it is asinine to

assume that classroom behaviour is determined solely by notions of national culture. As Tudor (1998: 310) maintains *‘The reality of teaching [and learning] emerges from a dynamic interaction of [individual and socio-cultural] rationalities, a process which is unique to each classroom and which can rarely be predicted in advance’*.

4.5 Chapter Summary

This chapter (Chapter 4) has identified Pg DME and its important content and implications. It has focused on the key theories in: the role of HE in economic growth; implications for Pg DME; design management curriculum and skills development; cultural impacts on teaching & learning. The major conclusions are:

- Postgraduate education offers major changes/opportunities for universities, postgraduate programmes, and students existing under the impact of the ‘New Economy’;
- Experience in collaborative interdisciplinary learning is an important feature of a core curriculum in Pg DME;
- Pg DME must include a significant course of study in interpersonal skills and human dynamics and a general creative education with a focus on advanced design principles;
- Successful participation in PBL requires particular kinds of learning styles in design management subject teaching and learning. However, learning styles are sensitive not only to the prevailing educational diet of individuals but also other cultural aspects. Different traditions within education will lead to culturally specific norms for teaching and learning.

As this is the final chapter of the research context, following is the summary of section two. It will illustrate the establishment of the theoretical foundation of the research study.

Summary of Section Two

This review of the research context has examined some of the issues which inform the development of Pg DME in China. It also shows how the influence of national culture, policy, industry, teachers and learners can impact upon design management knowledge and its education course content and delivery. Table 2.8 summarises the structure of the theoretical foundation in section 2.

Levels of the content in literature review	Areas concerned in the literature review	Hypothesis	Chapter Locations
Macro Level of DMKT	National Culture and National Policy	Knowledge transfer is heavily influenced by national culture and government policy	Chapter 2
Meso Level of DMKT	Concept of Design Management	The essential issues of successful design management reflect on: design leadership; organisational management culture; and cultural directed innovation and creativity	Chapter3
Micro Level of DM KT	Postgraduate Design Management Education	The implantations of design management; and cultural impact on teaching and learning should be of great concern in Pg DME development	Chapter 4

Table 2.8 The Research Context of Design Management Knowledge Transfer (DMKT) and its Education Development Issues

Further research is needed to fill gaps in the current knowledge about western practice and also to document the development of design management in China. They are:

- **Macro level of DMKT:** This reflects the strategic level of Pg DMED: in terms of national culture; and design management policies.
- **Meso level of DMKT:** This reflects the tactical level of Pg DMED: in terms of management culture; and design management teaching resources and process.
- **Micro level of DMKT:** This reflects the operational level of Pg DMED: in terms of teaching and learning culture; and its implementation.

Most importantly, each level of Pg DMED will involve answering three research questions of the study (See 1.1.2.1).

The next section of this study (section 3) will illustrate the philosophical and methodological approach behind the research itself, and therefore the beliefs and assumptions underpinning the work. It also provides the rationale for collaboration on the research study, as well as the role of the researcher.

Section Three:

Research Methodology:

Research Philosophy; Strategies; and Research Design

Chapters 5

Introduction

This research project is based upon an innate belief in the subjective nature of reality from within the interpretive paradigm (Burrell and Morgan, 1979; Saunders et al., 2007). Within this context, this section will highlight both the philosophical basis and the methodological approach undertaken for choosing and analysing both the data collection and data analysis at a conceptual and empirical level. It will further conclude with an overview of the methodology used in this study -- the theoretical basis for the methodological considerations, which were used to select the most appropriate methodology for this study, and a detailed explanation of the appropriate research methodologies.

To better describe the philosophical basis and the methodological approach undertaken for this research study, section 3 (chapter 5) will meet the aims of this section. These are to:

- Describe the methodological foundations, and discuss the ontology and epistemology of the research study;
- Describe the research strategies, and outline the research process employed;

- Discuss the rationale for the research design favoured, including research approach; type of data to be collected; data collection tools and procedures; selection of sites for collecting data; type of analysis planned; data analysis and assessing perspectives on the recommendations;
- Discuss issues of reliability and validity of the approaches and methods and techniques used in the research.

Figure 3.1 outlines section three (Chapter 5).

**Section Three: Research Methodology:
Research Philosophy; Strategies; and Research Design
C5**

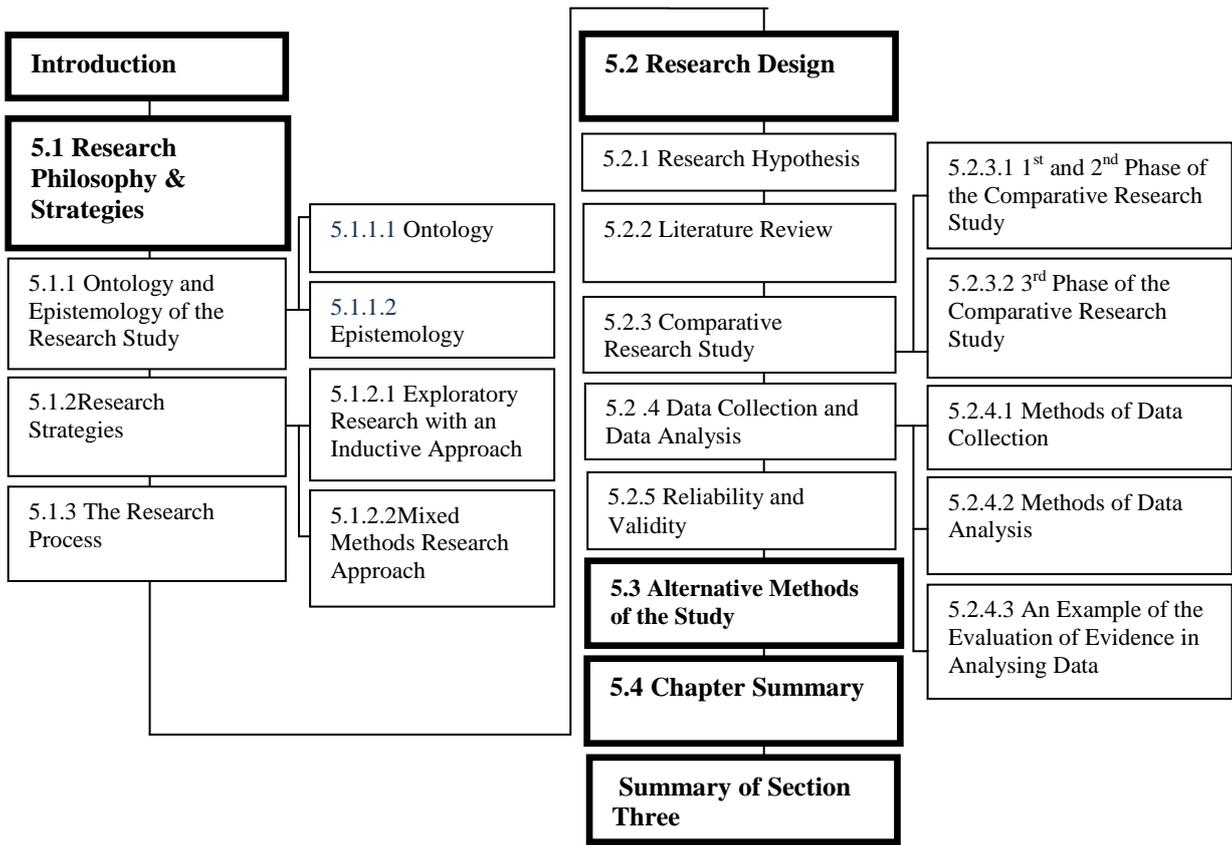


Figure 3.1 Section (Chapter 5) Map: Research Methodology: Research Philosophy; Strategies; and Research Design

5.1 Research Philosophy and Strategies

Research methodology occupies a position of unique importance. Sekaran (2003) suggests that a research methodology ‘*defines the activity of a specified research, its procedural strategies, methods, for progress measurement and criteria for research success*’. Therefore, a methodology does not simply frame a study but it identifies the research strategies and tools employed, based on the specified research aims (Yin, 2003; Neuman, 2006; Bryman; 2001). Therefore, this chapter will firstly generate an explanation of research philosophy; strategies and process employed in this study.

5.1.1 Ontology and Epistemology of the Research Study

Easterby-Smith (2001) indentifies the reasons of the philosophical exploration of a research methodology as to:

- Refine and specify the research methods which help to clarify the overall research strategy;
- Avoid inappropriate use of research methods and unnecessary work through evaluating a range of methodologies and methods; and
- Encourage researchers’ abilities of innovation and creativity in their selection and adaption of research methods.

5.1.1.1 Ontology

Morgan (1980:610) believes that, ‘*knowledge and understanding of the world are not given to human beings by external events; humans attempt to objectify the world through means of essentially subjective processes*’. It is a subjective view of reality that underpins this research study, where the social world is ‘constructed’ by individuals and groups who create the ‘reality’ in which they operate (Burrell and Morgan, 1979; Mertens, 1998; Denzin, 2001; and Aram

and Salipante Jr., 2003). This belief operates under the assumption that there is no truth or absolute reality to be established by the research. In other words, individuals perceive different situations in varying ways according to their own philosophical views, values and beliefs on how the world works.

Therefore, the researcher acts as an interpreter, who attempts to identify meanings associated with particular social action and/or processes through such things as conversation and interaction, by making strange that which is normal by challenging our own preconceived notions about the process in question (Toren, 1996; Baker, 2001), thus attempting to understand the subjective meaning of action in an objective manner (Schwandt, 2000; Mason, 2002).

The development of DME system is essentially a human construct and the success or failure of implementation is largely dependent upon the values and beliefs of the individuals or groups involved in the development process, the study sample. As such, the ontological assumption for this research study is that the most suitable methodological paradigm is determined by the researcher and falls under the interpretivist or social constructionist perspective. This suggests that there are multiple realities to be understood, (Mertens, 1998; Denzin, 2001, Aram; and Salipante Jr., 2003), which are all based upon the overall transferability of design management knowledge, curricula and teaching and learning strategies from the UK to China.

5.1.1.2 Epistemology

The researcher acts as an interpreter of the ‘participants’ ‘constructions’ or ‘interpretations’ of the social world, looking for patterns that help to describe and explain the social activities under consideration. Objectivity in this sense refers to the researcher’s ability and willingness to listen to and ‘give voice’ to participants (Strauss and Corbin, 1998: 43). Thus, both the researcher and the

participant are each at the centre of their own hermeneutic circle (Denzin, 2002), where the researcher moves from a stage of pre-understanding to understanding, which then informs the next stage of pre understanding/ understanding, forming the hermeneutic spiral. Within the spiral, data are interpreted and re-interpreted as the understanding of the social world grows and changes, resulting in better theory (Gummesson, 2003). Within this process of interpreting, the researcher responds as a whole person and acts as *'an instrument in observation, selection, coordination, and interpretation of data'* (Spiggle 1994: 492).

Therefore, for epistemological assumption of this research study, the interpretive approach to this research seeks to understand the *'world as it is'* and to *'understand the fundamental nature of the social world at the level of subjective experience'* (Burrell and Morgan, 1979:28). It focuses on identifying and investigating patterns in contextually specific emerging social processes and their associated meanings, based on the interaction of individuals and groups with their social environments, and is thus appropriate for investigating institutions in a suitable approach of conducting innovative, collaborative and practically relevant research. However, Miller *et al.* (2008) suggests that in any given research context, there may be several valuable ways of knowing, and that accommodating this plurality can lead to more integration in research. Therefore, as the researcher in the study, a number of roles have been assigned to facilitate data collection procedures, data analysis procedures, methods of verification, and outcome of the study to its relation to theory and literature (Denzin and Lincoln, 2000; Miles and Huberman, 1994; Creswell, 2007).

This research included fieldwork and it is inductive, in that concepts and hypotheses arise from emergent details. Furthermore, this study was carried out in an under-researched area in order to develop a hypothesis concerning the transferability of design management knowledge, curricula and teaching and learning strategies from the UK to China and present new information in

writing. Due to the exploratory nature of the research, the gathering and analysis of data is guided primarily by futures theory, methods and techniques, whereby the collection, examination; process of continual and re-examination of the data determine the research findings.

5.1.2 Research Strategies

Yin (2003) believes that defining the research questions is the most important stage in conducting research; as they determine what research approach is most appropriate. This research study is an investigation into the Pg DME system in the UK and reports on how it applies to the Chinese context. It has been based on three research questions (see 1.1.2.1).

5.1.2.1 Exploratory Research with an Inductive Approach

Depending on the purpose of research, social research can be broadly divided into three groups (Yin, 1994; Neuman, 2006). They are: 1) Exploratory (i.e.: exploring a new topic); 2) Descriptive (i.e.: describing a social phenomenon); and 3) Explanatory (i.e.: explaining why something occurs). This research study neither describes nor investigates the causes of particular phenomena. The exploratory nature of this research study, which is determined by the phenomenon's attributes, lends itself to a research-then-theory (inductive) approach to answering the research questions and developing new ideas of Pg DME. It allows a creative, open-minded, flexible approach, adopting an investigative stance and exploring all available sources of information (Neuman, 2006).

a, Exploratory Research

In this study, an exploratory approach was taken to data gathering in order to provide ‘actionable’ results to in order to better understand the complex research study objectives in their natural context. Based on this assumption, in conjunction with the overall epistemological approach, the research focuses on understanding the meanings individuals present about social actions and processes, which can help to identify underlying patterns of social action, where little is currently known. This approach is therefore used to seek insights into the questions, identify alternative courses of action, and establish priorities for further research. The question; ‘what?’ is a justifiable rationale for exploratory research (Yin, 2003; Neuman, 2006). However, exploratory research tends not to develop a hypothesis, or may develop a hypothesis but not test it (Yin, 2003).

Therefore, the research focuses on how individuals, academic institutions as well as public and private sector organisations involved in the development and implementation of Pg DME understand, ascribe meaning to and take account of their actions and the actions of others, and how these actions are mediated by historical, cultural and institutional contexts. By engaging with these individuals, academic institutions as well as public and private sectors, learning of their experiences and opinions of being involved in these social activities (Denzin and Lincoln, 2002),it is possible to identify any underlying patterns in the processes involved in the development and implementation of Pg DME curriculum design at a broader organisational and international level.

b, Inductive Research

With a research goal focused on helping to solve a practical problem, and results that can be made actionable in a ‘real world’ context, data collection must be both data rich and data-led (Crane, 2000; Eisenhardt,1989; and Baker,

2002). This research study began from an inductive, unstructured approach. As a flexible approach, inductive research allows the researcher to observe data and facts to reach a tentative hypothesis and define a theory as per the research problem, as well as support the research to give inductive arguments, where no single theory or hypothesis was tested (Baker, 2002). Thus, the approach allowed for an unstructured investigation of Pg DME curriculum development and implementation, providing the opportunity for a more holistic investigation of potential issues and relationships as they exist in practice. The inductive approach in this study is also highly associated with the interpretivist philosophy, which allows the researcher to provide subjective reasoning with the help of various real life examples (Yin, 1994; Neuman, 2006).

5.1.2.2 Mixed Methods Research Approach

A recent body of work debates the appropriateness of combining qualitative and quantitative methods within a single research project. Issues addressed in this debate include whether qualitative and quantitative methods investigating the same phenomena, are philosophically consistent, and are paradigms that can reasonably be integrated within a study (Greene, Caracelli, and Graham, 1989; Morgan and Smircich, 1980; Sale, Lohfeld, and Brazil, 2002; Yauch and Steudel, 2003; Bryman, 2001). There does in fact appear to be a certain amount of convergence between quantitative and qualitative data gathering approaches and “the war of paradigms” has been changed by the increasing interest and pursuit to join these two approaches together (Juodaitytė, 2007). Neuman (2006:177) presents a stance on the relationship between these two methodological approaches: *“the qualitative and quantitative distinction is often overdrawn and presented as a rich dichotomy. Too often, adherents of one style of social research judge the other style on the basis of the assumptions and standards of their own style... The well-versed prudent social researcher understands and appreciates each style and limitations of each. The ultimate goal of developing a better understanding and explanation of what*

each has to offer.” As a result, the fields of applied social science and evaluation are among those which have shown the greatest popularity and undertaking of mixed methods research designs. A new era in research methods is emerging and has been quietly lauded by several emerging authorities in the field of mixed methods research (Cameron and Miller, 2007; Cameron, 2009). Pragmatic researchers utilise mixed methodology within the same inquiry, they are able to delve further into a dataset to understand its meaning and to use one method to verify findings from the other methods (Onwuegbuzie and Leech, 2005). Johnson and Onwuegbuzie (2004:17) summarise the philosophical position of mixed method researchers as: *‘...offering a practical and outcome- orientated method of inquiry that is based on action and leads, iteratively, to further action and the elimination of doubt; and it offers a method for selecting methodological mixes that can help researchers better answer many of their research questions’.*

In 2007, Creswell and Plano Clark developed a four-type typology (Table 3.1). The four designs are: Triangulation; embedded; explanatory and exploratory which are classified using categories associated with variants, timing, weighting and mix.

Design Type	Timing	Mix	Weighting/ Notation
Triangulation	Concurrent: quantitative and qualitative at the same time	Merge the data during interpretation or analysis	QUAN + QUAL
Embedded	Concurrent and sequential	Embed one type of data within a larger design using the other type of data	QUAN(qual) Or QUAL(quan)
Explanatory	Sequential: Quantitative followed by qualitative	Connect the data between the two phases	QUAN → qual
Exploratory	Sequential: Qualitative followed by quantitative	Connect the data between the two phases	QUAL → quan

Source: Adapted from Creswell & Plano Clark (2007: 85)

Table 3.1 Major Mixed Methods Design Types
Creswell and Plano Clark (2007:85)

In this research, therefore, a mixed methods research approach was used to derive rich data and a much wider range of outcomes. It is primarily a qualitative study which utilised qualitative data and quantitative analysis:

Initially, this study started with an in-depth review of the relevant literature, then an analysis of findings through secondary sourced material and in-depth interviews. An examination of the contribution of such a study to developing an understanding of the chosen context and a rationale for its use as a research tool, were themes also embedded in the study.

The choice of data collection and analysis methods employed in research studies demands great thought and consideration. Furthermore, determining whether a particular method is indeed fit for purpose will depend largely on the nature of the study being undertaken and the research questions being asked. By limiting the data to a set of narrow, objective standards, quality data may be rejected and it is this accusation which the author has tried to dispel in the research. In order to assuage detractors of qualitative data however, alluded to above, data will be analysed within a quantitative framework. Consequently, as the project is primarily one of discovery, the approach chosen was couched very much in an interpretive framework. Not only does this allow for rich seams of data to be explored, it also means that the nature of evidence, and subsequent analysis of data rests someway between a positivist and more grounded approach. As Anfara, Brown and Mangione suggest “*a key part of qualitative research is how we account for ourselves, how we reveal the world of secrets*” (2002: 29).

5.1.3 The Research Process

The process of research has been seen as a journey that may involve almost as many steps backward as forward. Methodologically, this study went through an iterative learning process that involves feedback and modification at many stages. The research process has been modelled as a funnel from the product

development literature (Wheelwright and Clark, 1992). The funnel symbolises the relatively greater latitude and choice early in a project, which progressively narrows as time goes by. Before a single piece of data is collected, the options are almost unlimited. At a certain point, feedback contributes only to minor refinements in output (Edmondson and McManus, 2007). Figure 3.2 depicts the model of the research study process. It starts (or restarts) with some level of awareness of the state of prior work in an area of interest. Ideally, a researcher develops a good all-around understanding of major streams of work in the research context, and then begins to shape the research questions (Edmondson and McManus, 2007).

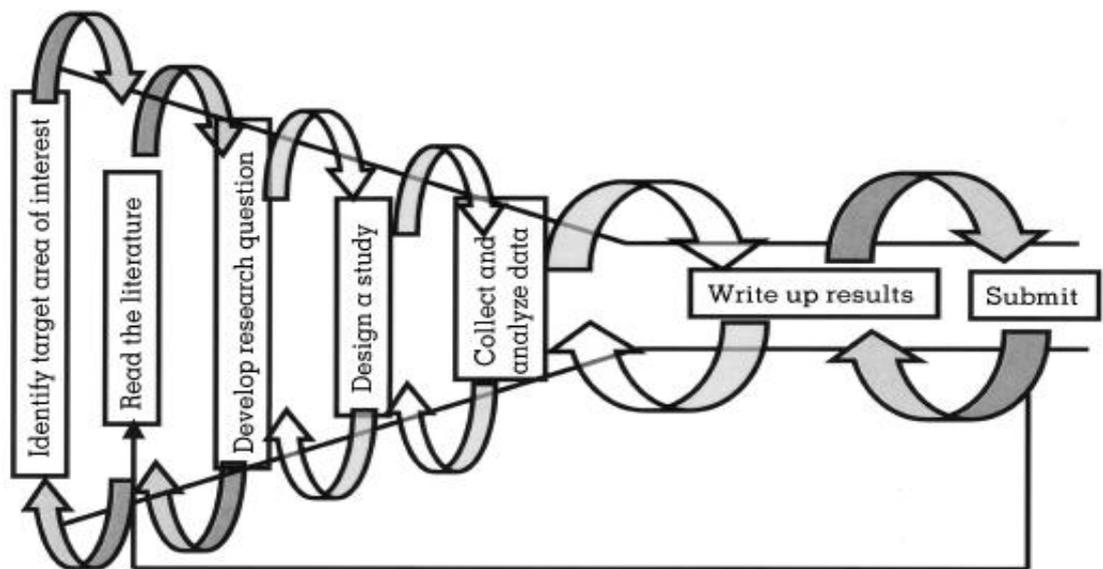


Figure 3.2 Research as an Interactive, Cyclic Learning Journey
Edmondson and McManus (2007:1174)

As Figure 3.2 suggests, data collection narrows the scope of subsequent decisions, *‘it is important to spend sufficient time iterating within the first three stages in the process, as indicated by the wider cyclical arrows in the model’* Edmondson and McManus (2007:1174).

Thus, this research study requires learning cycles. As a research question becomes more focused, initial research design ideas emerge and are refined and

elaborated. Design choices broadly involve the type of data to be collected and the methods used to collect the data, such as desk research and in-depth interviews. Therefore, to reflect the above theory in this research study, a brief overview of the research design process and methods are presented in Figure 3.3. Just as consideration of design choices may result in reformulation of research questions, experiences during data collection may suggest that the research design be modified. To conclude, *‘For all field research endeavours, however, a learning-oriented mindset that values and welcomes critical feedback is an essential asset of the field researcher seeking methodological fit’* Edmondson and McManus (2007:1175).

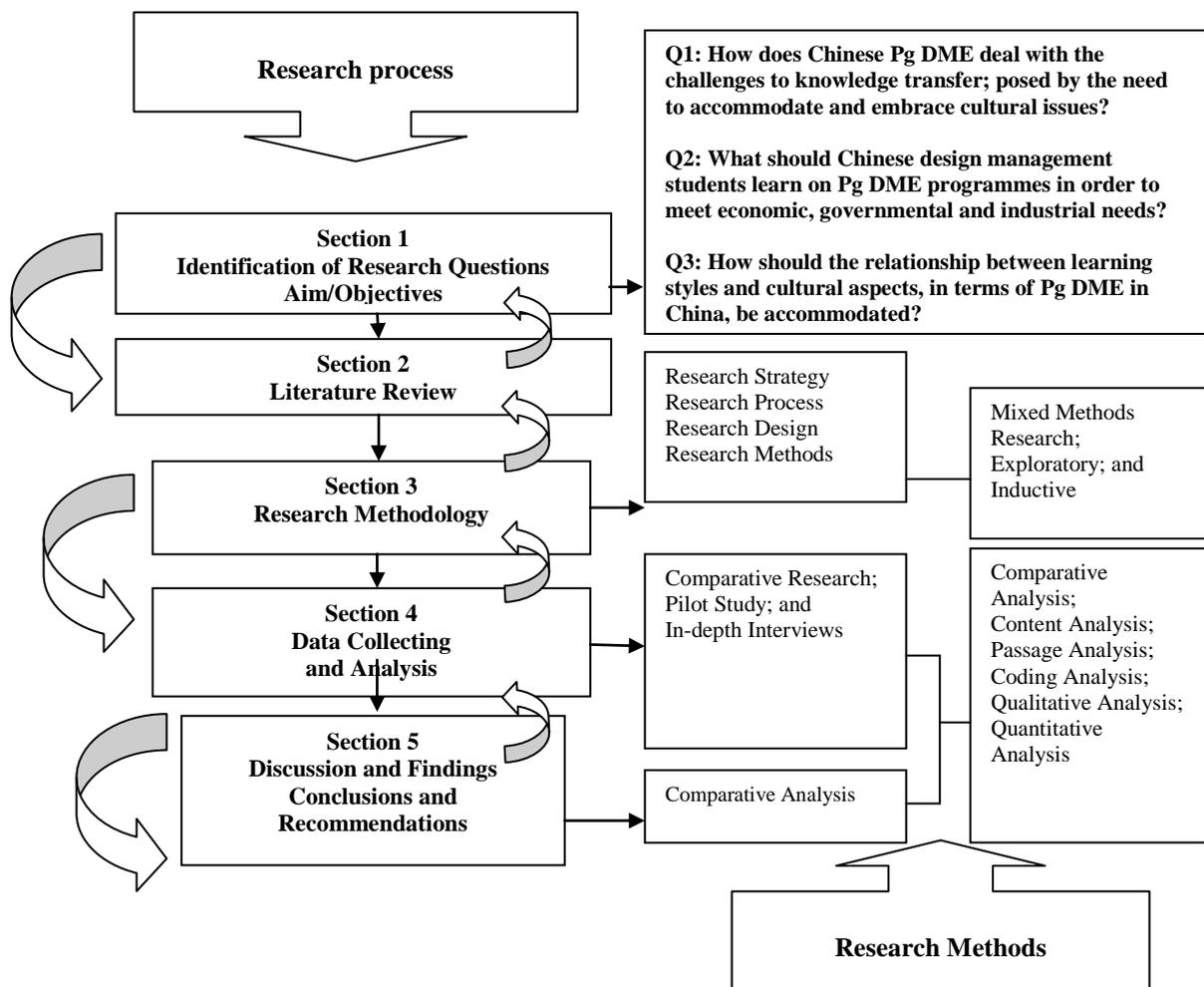


Figure 3.3 The Research Process and Methods of this Research Study

5.2 Research Design

Research methodology and research design are distinct academic constructs. A research methodology references the procedural rules for the evaluation of research claims and the validation of the knowledge gathered, while research design functions as the research blueprint (Creswell, 2003). Yin (2003) argued that the main purpose of research design is to guide the researcher to avoid situations where collected data do not address the initial research intention. Moreover, Sproull (1986) suggests the guidelines for an effective research design are: 1) the type of information desired; 2) availability of resources; 3) the ability to manipulate the independent variable; and 4) the degree of control in the selection and assignment of subjects. However, Creswell and Plano Clark, (2007); Tashakkori and Teddlie,(2003); Onwuegbuzie et al. (2007) emphasise that the elements of good research design should be specified prior to data-collection in experiments and surveys, including hypothesis, formulation, measurement and sampling. In qualitative research, these elements could be evolved during the course of the study.

Therefore, the research design of the research study aims to indentify the following matters, which will respond to four interrelated research problems (Punch, 2000; O'Brian, 2009):

- The articulation and selection of the research questions;
- The identification of the relevant data;
- Determination of data collection focus; and
- The selection of the method by which the data will be analysed and verified.

5.2.1 Research Hypothesis

Within the context of the research methodology, each salient aspect of research poses a set of unique questions and articulates a specified group of objectives. However, as a researcher strives to resolve the tension between the ideal version of his or her project and one that is feasible and viable, the design evolves. The research design functions to articulate the strategies and tools by and through which data will be collected and analysed. It additionally serves to connect the research questions to the data and articulate the means by which the research hypothesis shall be tested and the research objectives satisfied (Punch, 2000). Therefore, *'considering how to operationalise, explore, or test different research questions often leads to the realisation that those questions or hypotheses need to be sharpened, revised, or scrapped'* (Edmondson and McManus, 2007:1174).

As this research study is based on an investigation into Pg DME system in the UK and reports on how it applies to a Chinese context, the hypothesis of this research is that design management is a bi-directional synthesis of information; the designers need to understand the management of their discipline and managers need to understand the fundamental elements of design. Although there is a much longer history of teaching design management in the west compared to China, it is possible that there are false assumptions about the nature of knowledge within China, its culture, and the economic needs of the country. Therefore, the theoretical framework is very broad, and will be informed by the literature review and the findings that are established as the research programme develops.

The research direction is influenced and informed by the findings in the early stages of the research, where 1) DME related policy between the UK and China; and 2) Pg DME curriculum development between the UK and China were subject to comparative studies; 3) a number of interviews with UK and Chinese

education providers, together with interviews within Chinese public and private sectors, codified the hypotheses. In respect of the in-depth interviews, an open-ended qualitative research was undertaken. With the pilot study, data was generated, recorded and the subsequent findings detailed and interpreted. One of the main reasons for selecting a qualitative research approach was to gain a deeper understanding of the content and to develop an understanding of teaching, learning and practise for existing Pg DME courses in the UK and China.

This study endeavours to avoid a simple testing of a hypothesis, as all good research should, in order to confirm or refute myths, not merely perpetuate them. A desire to establish what actually exists therefore, rather than a search for truth in any objective sense, means that the study takes on a more practical, subjective bent. As Cohen, Manion and Morrison (2001: 3/5) suggest, research is '*concerned with understanding the world*' and not '*the discovery of truth*'. Furthermore, as the project is a significant cross-cultural undertaking, the lines of enquiry are undoubtedly more fluid and iterative. This suggests that the research is perhaps more open than more directed studies and, although guided by relevant literature; findings are more likely to be of a non-prescribed nature.

5.2.2 Literature Review

Ritchie and Spencer (2002:306) suggested that applied research can be distinguished from theoretical research '*through its requirements to meet specific information needs and its potential for actionable outcomes*'. And the best applied research is based on a solid foundation in good theory (Gummesson, 2003).

This research does not search for data that will support or disprove the hypothesis, rather develop theories and propositions from the data collection as the research develops. With more open-minded approaches, an extensive

review of literature and material was undertaken. ‘The *literature review should be a sounding board for ideas, as well as finding out what is already known and what specific methodologies have been used*’ (Burns, 2000:390). Often research reports identify additional questions that would be fruitful for the purpose. The project review highlighted, and subsequently focused on, the existing research literature that pertain to the topic of the current study, aided in identifying unanswered questions, unexplored areas, relevant constructs, and areas of low agreement; more salient issues. The following areas were thus reviewed:

- Knowledge Transfer Issues: knowledge transfer and its influence by national culture and government policy;
- The Theoretical Context of Design Management: managing design in organisational dynamics; design leadership; managing design in strengthening cultural impacts on innovation, creativity and management style;
- Design Management Education (DME): the role of HE in economic growth; implications for DME; design management curriculum and skills development; and teaching & learning strategies.

Through various literature reviews and generated research problems, the directions of the research question were finally indentified: differences in culture, education systems and economic drivers make the transfer complex, thus requiring interpretation as well as translation in Chinese Pg DME 1) policy making; 2) curriculum development; and 3) teaching & learning strategies.

5.2.3 Comparative Research Study

Comparative research is a broad term that includes both quantitative and qualitative comparison of social entities (Mills, van de Bunt, and de Bruijn, 2006). Social entities may cross many lines, demanding education and cross-cultural comparisons. The underlying goal of comparative research methods is to search for similarity and variance as they ‘*often apply a more general theory and search for universals or underlying general processes across different contexts*’ (Mills, M., van de Bunt, and de Bruijn, 2006:621).

As this research study constructs an investigation into design management knowledge; Pg DME curricula; and teaching & learning strategies in the UK and reports on how it applies to the Chinese context; the major focus of much of this comparative research study is inspired by a need to create comparative indicators to measure the “efficiency” and the “quality” of Chinese Pg DME. Therefore, the 3-phased comparative research study has focused on the following 5 stages, which can, in turn be subdivided into 3 phases:

1st Phase: Comparative study of Pg DME policy making:

- Comparison of DME related policy between the UK and China;

2nd Phase: Comparative study of Pg DME curriculum development:

- Identification of current models of Pg DME both in the UK and China;

3rd Phase: Comparative study of Pg DME implication:

- Investigation of best practice in Pg DME system through in-depth interviews of leading academic individuals selected both in the UK and China;
- Test against Chinese needs by a collection of primary data both in public and private sectors in China; and

- Comparative analysis of the main findings with evaluation and discussion of these new developments and their implications.

5.2.3.1 The 1st and 2nd Phases of the Comparative Research Study

In general, the less known about a specific topic, the more open-ended the research questions, requiring methods that allow data collected in the field to strongly shape the researcher's developing understanding of the phenomenon (e.g. Barley, 1990; Edmondson and McManus, 2007). In contrast, when a topic of interest has been studied extensively, researchers can use prior literature to identify critical independent, dependent, and control variables and to explain general mechanisms underlying the phenomenon (Edmondson and Mcmanus, 2007).

Therefore, *'exploiting prior work allows a new study to address issues that refine the field's knowledge, such as identifying moderators or mediators that affect a documented causal relationship'* (Edmondson and Mcmanus, 2007:1159) . When theory is in an intermediate stage of development, by nature a period of transition, hypotheses can be tested through a new study and simultaneously allow openness to unexpected insights from qualitative data.

As a result, 1st and 2nd phases of the study build a comparative study of DME related policy, and current model of Pg DME between the UK and China.

a, The 1st Phase of the Comparative Research Study: Comparative study of Pg DME policy making

This phase of comparative research adopted historical comparative (H-C) research method, enabling comparisons of times and events, by studying relationships between events which have influenced the past, continue to influence the present and will affect the future, to inform possible outcomes

and provide answers to the research questions (Neuman, 2007). Furthermore, *'the H-C approach is appropriate when asking big questions about micro-level change, or for understanding social processes that operate across time or are universal across several societies'* (Neuman, 2007: c12).

Thus, in this phase of the comparative study, H-C research was adopted to understand the relationship between national design / HE policy and industrial needs in the UK and China. Their respective relationships were then compared, thus addressing the 1st findings of the research study (see Chapter 6).

Important sources of data for H-C research are archival data (e.g. official documents, which are considered more reliable than secondary sources); running records, and recollections (Schutt, 2006). This allowed for analysis of the related policy of DMED at multiple levels, including cultural, governmental and industrial levels both from the UK and China. Documents related to the investigation outcomes ($n=17$), including review reports, the national programme, departmental memos and governmental blueprints. See Appendix 2-3, the key documents of phase one of the comparative research study.

b, The 2nd Phase of the Comparative Research Study: Comparative study of Pg DME curriculum development

Documents of current model of Pg DME sources both in the UK and China ($n=21$, see Table 4.1 and 4.5 for reference), including handbooks and course descriptions.

The initial part of the 2nd phase of the comparative research study entailed the development of a current model of core curriculum content in existing Pg DME courses in the UK.

From the review of the historical background of the design management discipline (see 1.1.1), the UK is reputed to have one of the most mature and recognised DME systems in the world, therefore this part of the research started with a mapping of UK postgraduate degree level design management provision, followed by a critical analysis and evaluation of the approaches and curriculum content. In order to identify current UK models of Pg DME through secondary sourced material, and to complete an investigation of common elements in the Pg DME system, sampling and analysing individual selected design programmes in the UK was undertaken. Once all the data had been assembled, a content analysis approach was used to review the data. Since the curriculum of Pg DME study was a generic framework which universities customise in light of their different contexts, the survey targeted most of the universities in the UK that have Pg DME programmes in order to present a wide variety of course content. For institutions details see Table 4.1.

The second part of the 2nd phase of the comparative research study entailed the development of a current model of core curriculum content in existing Pg DME courses in China. This targeted all the universities in China that have Pg DME programmes, to investigate current design management core curriculum in Chinese HEIs and to identify culturally sensitive areas for further investigation. For institutions details see Table 4.4.

In order to get a detailed idea of what a Pg DME curriculum entailed in the existing participating institutions both in the UK and China, the study identified five criteria based on extensive desk search. These criteria appear to bear upon the success and failure of design management postgraduate courses, namely:

- Criterion 1: course content;
- Criterion 2: teaching aims and objectives;
- Criterion 3: course structure;
- Criterion 4: assessment and learning outcomes;
- Criterion 5: teaching methods.

Once all the data had been assembled, a comparative analysis approach was used to review the data, at both 1st and 2nd phases.

5.2.3.2 The 3rd Phase of the Comparative Study: Comparative study of Pg DME implication through in-depth interviews both in the UK and China

Recent studies acknowledge that interviewing is an interactive process where the researcher is seen '*as part of the interactions they seek to study and influence those interactions*' (Frey and Fontana, 1991). Interview methods can be based on narrations and storytelling done by the interviewee, in order to minimise structuring on the part of the interviewer. Such interview styles imply interviewing techniques that leave most of the structuring within the interview situation up to the interviewee (Gubrium and Holstein, 1997: 153). Much of the literature to date has focused primarily on the interview methods and techniques to enhance the data set. Forms of narration-based interviewing techniques are, for example, the in-depth interview; the interviewer seeks to encourage free and open answers similar to everyday conversations (Johnson, 2002; Legard et al., 2003; Lofland and Lofland, 1995), the open ended interview as it was coined by Paul Lazarsfeld (1944).

In-depth interviews are meant to capture the respondents' perceptions and perspectives such that the researcher can reconstruct meanings attributed to experiences and events. In the course of the interview, the interviewer asks an initial open question and then uses different probes and other techniques to achieve a greater depth of answers.

The interview is a collaborative, meaning-making experience involving both the researcher and participant and includes a powerful method based on open-ended conversation, called an ethnographic interview (Spradley, 1979). Spradley proposes descriptive questions in order to allow for openness for the interviewee's subjectivity that is necessary in qualitative interviews. In order to deepen understanding, contrasting, semi-structured questions were used in this interview framework. The main purpose of the semi-structured interview is to gain a detailed picture of the respondent's belief and perception of the topic in question, and to give both the researcher and respondent more flexibility than would a more structured interview (Smith, 1995; O'Brien, 2009). The semi-structured interview enables the researcher to engage with the social world of the interviewee, who is perceived as an expert telling their own understanding of a given phenomenon. Schwandt (1997) contends that *'it has become increasingly common in qualitative studies to view the interview as part, or a form of, discourse between two or more speakers or as a linguistic event in which the meanings of questions and responses are contextually grounded and jointly constructed by interviewer and respondent'*. Bryman (2001) argues that semi-structured interview *'is a term that covers a wide range of instances. It refers to a context in which the interviewers has a series of questions that are in the general form of an interview schedule but is able to vary the sequence of questions'*.

Therefore, in this study, semi-structured interviews were undertaken with a greater degree of structure than open-ended interviews. The interviews were predominantly conducted around a number of topics that rose from the literature review and the 1st and 2nd phases of the comparative study of this research programme. The interviewees comprised leading academics, selected both in the UK and China and design management professionals from both public and private sectors in China.

Hantrais (2009:59, 103-108) points out that the quantitative/qualitative divide may have been exaggerated and that for many researchers it is no longer so important. There has been a greater acceptance of “methodological pluralism” in the social sciences generally and in comparative studies specifically. Therefore once all the data had been assembled, in order to assuage detractors of qualitative data however, data would be analysed within a quantitative framework. A comparative data analysis approach was used to review the data.

5.2.3.2.1 Designing the Questionnaire

Bryman (2001) suggested that *‘the interviewer usually has some latitude to ask further question in response to what are seen as significant replies’*. The questionnaire was initially designed to test the assumptions that referred to the three research questions:

- Pg DME is facing the challenges of building curricula to meet industry needs and cultural impacts on creativity and management style (referring to the research questions 1 and 2);
- Design management studies preferred style of teaching and learning, in particular (referring to the research question 3).

After the 1st and 2nd phases of the comparative study had been carried out, the essential factors were drawn out from the findings, and grouped into four issue domains or conceptual categories. This also evolved to form the basis of predictive determinants of the questionnaire in the 3rd phase of the comparative study (see Table 4.6). While this is a large amount of information, it serves to focus on the forthcoming work, and also indicates the breadth and complexity of Pg DME in China.

Therefore, the survey questionnaire was developed by adopting the most useful elements relevant to the audit, which contained four important parts based upon an important grouping of findings that featured in the literature review, as well as in the 1st and 2nd sub-findings. There are four overarching issue domains and highly relevant discussion points (see Table 3.2):

Questionnaire Design	Issue Domains (featured in the literature review and 1 st and 2 nd sub-findings)	Discussion Points
Part 1	All four A-D	The broad context of design management
Part 2	A , Cultural impacts in design management ‘innovation’; B , Building curricula to meet industry needs	The key issues for design management implementation in both public and private sectors
Part 3	C , Course contents and structure Development; D , Teaching and Learning strategies	The content which Pg DME courses currently deliver and skills developed
Part 4	All four A-D	Transformation issues from west to east and its applicability & relevance

Table 3.2 Four Overarching Issue Domains and Highly Relevant Discussion Points for the Research Questionnaire

The questionnaire contains four parts. These are:

- **Part1: Q1-3 Broad context of design management:** Design management definition; challenges; and opportunities; Design Management versus Design Leadership;
- **Part2: Q4-6 Design management in the industry:** Design Management roles; Design versus Management;
- **Part3: Q7-11 Pg DME:** Module content; Learning outcomes; Curriculum design, Teaching and learning methods; meeting industry need;
- **Part4: Q12 Recommendations:** transformation from west to east; Applicability and Relevance.

5.2.3.2.2 Pilot Study on Questionnaire Design

The journey varies in certain predictable ways across the continuum. In more mature areas, intensive conceptualisation occurs early in the process while the literature is being digested, and compelling research question models are developed. Before collecting extensive interview data, the researcher wants to be confident that the key hypotheses are sensible and likely to be supported. This requires extensive conceptual work to develop the questionnaires carefully, obtaining considerable feedback from others, and refining the predictions before data collection (Bryman, 2001; Neuman, 2006; Yin, 2003).

In order to ensure the data collected from the designed questionnaire are valid and reliable, a formal pilot was undertaken and whose acceptability, validity, and reliability of the measure were tested. The pilot was based on subjects from a similar population to that being examined in the later survey. Since the private and public sectors in China were involved, ethical approval had also been obtained for this part of the study.

Therefore, the first version of the questionnaire was piloted as a focus group with the former MBA Design Management course leader at the University of Westminster and MA Design Management course leader at Warwick University. Changes were required and made, based on the discussions and subsequent feedback. The finalised survey questionnaire was developed by adopting the most useful elements relevant to the audit. The questionnaire was compiled to include a space allowing respondents to express opinions and make suggestions. Further interviews were held with the targeted experts in the field then revised.

Both protagonists involved at the pilot stage of the study (questionnaire) were extremely positive and vocal in expressing the view that the project would add value to the current research base in DME. The dearth of research on the

subject, particularly in relation to knowledge transfer, both in China and the UK, meant that the current piece of research would have resonance not only for those operating in the field of design management but the wider academic community. They did, however, raise a number of interesting points pertaining to the scope of the project itself and the content and structure of the questionnaire. They offered suggestions on the wording of questions (design) and advice on how the questionnaire should be undertaken. The recommendations were accepted and any changes subsequently incorporated in the design of the questionnaire are explored below.

The participants were particularly forthright in their desire to see the questionnaire undertaken on a face-to-face basis. Because the project focused on what design management practitioners wanted to see from DME, direct correspondence with specialists was requisite. Furthermore, as the questions were considered challenging and open to interpretation, a strength when seeking to explore responses of a more qualitative nature, the participants considered that the interviewer should be present in order to offer clarification and further explanation. The author accepts that, as with any questionnaire, the results need to be comparative and, because the way in which certain questions were worded encouraged diverse responses, the need for clear direction was essential. One of the main strengths of undertaking a project to explore qualitative data, through open questions, is also one of its most challenging: establishing correlation.

Consequently, as a direct result of the pilot questionnaire being undertaken, project aims were made more explicit in the questions and the overall focus was strengthened. Amendments to questions revolved around the need to cement the study's objective of exploring DME and knowledge (Question 2) and incorporate a wider cross-section of views from an industry perspective (Question 4). Moreover, whilst not wanting to lead interviewees in the main

study, explanations were also provided beneath the questions to allow for greater transparency and focus.

In short, the results generated from undertaking the pilot questionnaire clearly showed a need for further investigation and research in the field of DME and knowledge transfer. Both interviewees were unequivocal in their belief that this area of study is essential and that the project would prove beneficial to the academic community at large. The fact that they were willing to lend their voice to the final research project is further justification of the relevance for, and rationale behind, the work. Therefore, the transcripts of the interviews were also analysed and contributed to the findings.

5.2.3.2.3 Sampling

In selecting the sample for study, the first step should be defining the target population, which is vital for identifying the appropriate sources from which the data are to be collected (Oppenheim, 1992; Zikmund, 2000; and Chio, 2009).

a, Interviews of Leading Design Management Academics both in the UK and China

This part of the interview process was an investigation into current practice and attitudes of Pg DME in the HEIs both from the UK and China. A sample of leading academics from both the UK ($n=5$) and China ($n=3$) were identified and selected. The sample brought together a panel of scholarly experts in the area of design management both in the UK and China, who: 1) exhibit advanced knowledge in pedagogical implications; 2) were carefully chosen from both design and business schools, with strengths in in different subject areas of DME development, and 3) had enjoyed rich experiences on the paradigm shift that HE and DME are currently undergoing.

Firstly, UK interviews were carried out ($n=5$, see Table 4.7 for details) with course leaders; researchers and other senior academics involved in the operation of design management delivery, providing central information on the background of existing Pg DME courses. See Appendix 4-1 for the CV's and references of leading design management academics in the UK.

Secondly, the interviews were carried out in order to gauge the attitude towards the management of design in Chinese HEIs. Semi-structured in-depth interviews ($n=3$, see Table 4.7 for details) with course leaders; researchers and other senior academics involved in the operation of design management delivery, providing central information on the background of existing Pg DME courses.

For a finalised questionnaire, see appendix 2-1.

b, Interviews of Design/ Management Individuals in both Public and Private Sectors of China

The second stages of interviews undertaken in China moved onto the investigation of current practice and attitudes towards the management of design in Chinese public and private sectors. The purpose of this approach is to identify the possible mismatch between what Chinese design management students aim to learn and what they are actually exposed to on design management programmes; in order to enhance the understanding of Chinese Pg DME theory, contributing to the debate on the role and nature of design management.

A sample of organisations ($n=10$) were identified and selected in China. All the organisations met the following three criteria: 1) they work in the field of design or at management level; 2) they are significant employers of design or

business school graduates; 3) they represent a cross-section of the different kinds and different sizes of institution in public and private sectors in China.

As interviews were carried out on key personnel working in the design and business functions of the companies (see Table 4.13 for details), questions focused on current roles and responsibilities in order to gain an accurate insight into how design managers work in their business environment. The questionnaire is based on parts 1-2 of the UK questionnaire (see appendix 2-2).

The questions have been carefully developed to gain a deep understanding of the experience and knowledge surrounding industry demand for design managers; key skills that they should possess and Pg DME curriculum content.

5.2.4 Data Collection and Data Analysis

5.2.4.1 Methods of Data Collection

In the reality of research, data collection opportunities may need to emerge before the researcher has a clear direction about how the data is going to be used. At other times original research designs may be disrupted by other environmental changes beyond the investigator's control (Edmondson and McManus, 2007; Meyer, 1982). In such situations, *'the researcher must iterate back up the funnel* (see Figure 3.2), *returning perhaps to the literature for direction, or deciding to collect new data of a different nature to deepen understanding of a different phenomenon'* (Edmondson and McManus, 2007:1174).

In terms of data collection tools employed in the study, a variety of tools and approaches, concentrating on secondary sourced material, face-to-face in-depth interviews focusing on academics groups from public and private sectors, were identified and selected. The author sought to employ these techniques to assemble data of a more qualitative nature.

Embedded and fragmented understandings and meanings of Pg DME could be revealed in the data. For data collection, Czarniawska (2004) suggested that interviews are a production of narration on-site and also formulate narrative constructs of the informants' stances. Kvale (1996) asserted that interviews are processes of the inter-exchange of informants' views. Thus, the interview method was suitable for the collection of the views of the design management experts both from the HEIs and public/private sectors. Therefore, finally, the data collection tool utilised in this research project rested on the use of highly stylised questionnaires. These were initially undertaken during a number of in-depth face to face interviews with key personal in the field of both UK and Chinese Pg DME, in order to establish research workability. After this had been established, the questionnaires were further 'tested' in a live Chinese environment. Once achieved, questionnaires were introduced to the wider study. Whilst research is necessarily subjective; both qualitative and quantitative, by exposing data collection tools (questionnaires) to scrutiny from leading industrialists and academic experts alike, the iterative nature of the study which gives it its depth is upheld.

To conclude, the data collection began with a series of investigations into design management and its education undertaken by a group of design management experts.

- The first set of data was the documents related to the investigation outcomes ($n=17$), including the review reports, national programmes, departmental memos and governmental blueprints;
- The second set of data was the documents of current model of Pg DME sources both in the UK and China ($n=21$), including the handbooks and course prescriptions;

- The third set of data was the interviews of the five leading design management academics ($n=5$) in the UK;
- The fourth set of data was the interviews of university academics in design management ($n=3$) in China;
- The fifth set of data was the interviews of design managers ($n=10$) both in public and private sectors in China, respectively.

These informants were directly or indirectly involved in the investigation processes.

5.2.4.2 Methods of Data Analysis

a, Constant Comparison and Theoretical Sampling Methods

In analysing rich and descriptive data, scholars have noted that the constant comparison and theoretical sampling techniques could reveal any embedded evidence that informs new understandings of a field of study (Glaser, 1992; Glaser and Strauss, 1967; Charmaz, 2002). In the process of data analysis, the data were subject to several cycles of comparison in which the theoretical sampling illuminated new discoveries; out of which, the findings emerged.

Glaser (1992: 101) defined theoretical sampling as *'the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges'*. Similarly, Charmaz (2006: 96) construed theoretical sampling as *'seeking pertinent data to develop your emerging theory...conduct theoretical sampling by sampling to develop the properties of your category until no new properties emerge'*. Constant comparison between data, emerging concepts, codes or quotations is a technique of data abstraction to inform researchers to induce and discover

emerging theories by grounding the induction in data. However, Robson (2002) referred to it as a generic '*purposive sampling*' for various flexible research designs. In short, theoretical sampling guides further data analysis, interpretation and recollection to generate theories.

In this study, the analysis involved an overall and individual conceptualisation of the coded data, identifying pivotal and hidden interpretations of Pg DME. The overall and individual coding processes were three connected cycles of discovery. After the two sets of data analysis from related policy study and current curricula study of Pg DMED from both the UK and China were undertaken, the former unveiled fragmented meanings embedded in the views of leading design management academics, design managers from both public and private sectors and were categorised into four conceptual themes. The study formulated the findings in the three cycles of data analysis for further discussion in which any alternative vision of Chinese Pg DME could emerge.

Once data are collected, an effective researcher employs analytic techniques that match the nature and amount of data. The process of writing up the results of the analyses may trigger additional questions for the researcher, or suggest investigating alternative explanations during data analysis.

b, Content Analysis Approach

The collected data were analysed using a 'content analysis' framework. Content analysis is a widely used qualitative research technique. Rather than being a single method, current applications of content analysis show three distinct approaches: conventional, directed, or summative. All three approaches are used to interpret meaning from the content of text data and, hence, adhere to the naturalistic paradigm. The major differences among the approaches are coding schemes, origins of codes, and threats to trustworthiness (FangHsieh and Shannon, 2005). In conventional content analysis, coding categories are

derived directly from the text data. With a directed approach, analysis starts with a theory or relevant research findings as guidance for initial codes. A summative content analysis involves counting and comparisons, usually of keywords or content, followed by the interpretation of the underlying context. In this research, the three approaches are directly or indirectly involved.

Although this invariably allowed for the interpretation of more non-prescribed phenomena, the ‘raw’ quality of the data inherent in such a study meant that procedures had to be laid down after the event. As such, data analysis in this instance simply meant “*sifting, organising, summarizing and synthesising the data so as to arrive at the results and conclusions of the research*” (Seliger and Shohamy, 1997: 201). Consequently, throughout the study, in order to strengthen the integrity of the research undertaking, a framework for analysis (Figure 3.4) was followed in which to:

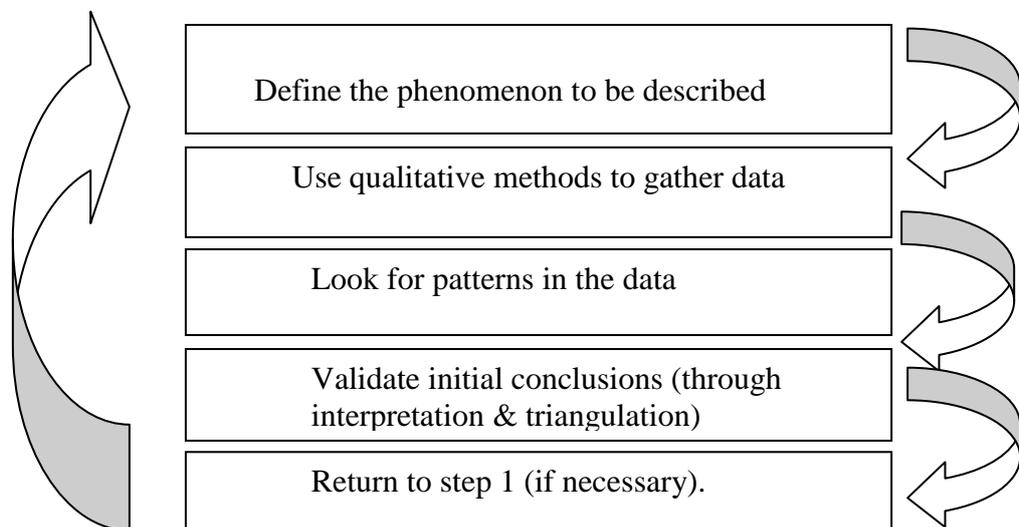


Figure 3.4 Conducting Qualitative Research
Based on Seliger and Shohamy (1997: 122)

In line with the above steps, analysing the rich, descriptive data entailed the undertaking of initial frequency counts, which set out to establish a number of discerning themes, which warranted further exploration. Content analysis was then undertaken to explore the context in which the themes were mentioned and determine any recurring patterns. Finally, commonalities between the three primary voices in the data set; namely identified current models of Pg DME through secondary sourced material of the UK and China both at strategic level and tactical level (1st and 2nd phase of the comparative research). Then interviews were conducted with course leaders both in the UK and China; design managers involved in the operation of design management delivery both in public and private sectors; as a means to maintaining rigour in the research process. Once word counts had been undertaken and patterns had emerged in the data, the need to validate the findings became the main concern (3rd phase of the comparative research).

In conclusion, consensus opinions and significant differences were noted as the most important issues to be addressed. The analysis of qualitative data used a quantitative framework and therefore this method is considered more of a 'mixed method'. From the findings, recommendations would then be developed. As the focus of inquiry was of an exploratory nature, the data were rich and varied and, on initial investigation, contained a great deal of insightful information. Once collected, as suggested above, the data were analysed manually and subjective decisions taken to determine what should be included. With such non-prescribed data, a number of initial passes of the transcripts had to be made in order to establish a manageable data set from which to work.

5.2.4.3 An Example of the Evaluation of Evidence in Analysing Data: The Interview Data

How the researcher responds to and handles the data has a profound effect on the 'success' of a study and there is a need, in an educational setting, to explore

data of a more emergent nature (Bryman, 2001; Neuman, 2006; Yin, 2003). For example, asking for people's opinions in a series of 'open' questions. Nevertheless, conscious of the need to subject the research findings to more rigorous scrutiny, 'content analysis' was the tool chosen as a means of interpreting the data generated from the questionnaire's findings (FangHsieh and Shannon, 2005). Initially, a simple word count was undertaken to determine frequency and highlight any recurring theme, in order to give the data a more quantitative approach. However, although it is widely accepted that a simple word count may reflect areas of greatest concern, it does not allow for inference and underestimates the importance of concept and context (Weber, 1990:73). Thus, more passes of the data set were undertaken with the aim that themes would emerge and the data met both qualitative and quantitative criteria.

Due to the nature of the research being undertaken, in order to allow for a more in-depth exploration of the research question, a procedure was required which would *'infer from symbolic data what would either be too costly, no longer possible, or too obtrusive by the use of other techniques'* (Krippendorff, 1980: 51). As discussed earlier, there was a huge amount of data to be sifted to avoid working with a-priori coding systems. Therefore, it was simply a question of listening and re-listening to the interviews to achieve an overall global sense and feel of the material; an essential task as, without a deep understanding of the data, the ability to identify promising lines of inquiry would have been compromised.

a, Understanding the Data

This approach proved invaluable in the foregrounding of themes and recurrences and permitted the study to proceed in a *'systemic and manageable, yet flexible manner'* (Marshall and Rossman, 1995: 5). It further ensured the

systemic progression of the study and allow for the interpretation of the data in a more coherent manner.

b, Focusing the Analysis

With such non-prescribed data, a number of initial passes of the script had to be made in order to establish a manageable data set with which to work. Once notes had been made, it appeared that there were a number of interesting characteristics in the data corpus which warranted further investigation. It was at this point, an initial framework was established for analysis and more stringent inclusion / exclusion criteria were able to be considered. These initial passes revealed that certain entries were largely irrelevant to the research purpose, and were subsequently discarded.

Furthermore, by building in reflexivity and opening all aspects of analysis to inspection, the integrity of the project has been maintained and no justification for the findings of this unique experience is made (Glesne and Peshkin, 1992).

c, Data Analysis: Coding

After further passes of the data set, rich seams were subsequently acknowledged, and themes or patterns which recurred on a regular basis, highlighted and organised into more coherent categories. Coding such themes, at first, seemed a complicated process, made more difficult by the fact that much research literature is often case specific. Miles and Huberman (1994: 433), for example, believe that since *'each qualitative study is unique, the analytical approach used will be unique'*. The iterative nature of the process also meant that new categories would appear and old ones be discarded as the task of analysis unfolded, adding to the complexity of the undertaking. Despite the drawbacks inherent in word-counts, the frequency of a theme's occurrence remains a powerful means of coding the data in the first instance.

d, Identifying Patterns

Data analysis was able to proceed systematically by simply identifying the number of times particular items appeared. In this way, qualitative data could be assigned quantitative meaning, *'a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules and coding'* (Stemler, 2001). These counts provided a rough estimate of relative importance and revealed general patterns in the data set. As suggested earlier, for the purposes of the main interview study, the word counts were generated manually. However, greater significance could have been assigned to the words in question, if each mention had broken down into text units and given a percentage score.

e, Identifying Consistency and Context

The assumption was accepted that words which are mentioned most often are the words which reflect the greatest concern does not always hold true. However, as Weber suggests *'Whilst this may indeed be the case in certain circumstances, a word count does not allow for inference and underestimates the importance of concept and context'* (1990: 73). Due to the uniqueness of qualitative research studies, researchers need to be aware of this limitation. Subsequently, when frequency counts had been undertaken to identify words of potential interest, further phases of the data were undertaken to examine the consistency of word usage and the context in which they were used. This procedure reinforced the validity of inferences being made from the data set and the overall integrity of the study.

f, Triangulation

By using three sets of data and subjecting the data to the same rigorous analysis procedures as the main interview data, it is believed that similar findings would

give the research process greater credence. The data sets are: 1) The third set of data: the interviews of the five design management leading academics ($n=5$) in the UK; 2) Fourth set of data: the interviews of university academics of design management ($n=3$) in China; and 3) Fifth set of data: the interviews design managers from both public and private sectors ($n=10$), in China, respectively.

In short, as Altrichter, Posch and Somekh (1996: 117) suggest: “*it [triangulation] gives a more detailed and balanced picture of the situation*”. Thus, the research confirmed findings by demonstrating similarities from multiple data sources and, due to the heuristic, iterative nature of the research, through re-inspection of the diary data.

5.2.5 Reliability and Validity

Issues of reliability and validity are common in quantitative research and it has been reconsidered in the qualitative research paradigm (Golafshani, 2003:597). Therefore, reliability and validity used in this research are providing springboard to examine what these two terms mean in the qualitative research paradigm.

Creswell and Miller (2000:124) suggest that validity in qualitative research is ‘*affected by the researcher’s perception of validity in the study and his/her choice of paradigm*’. In this context, concepts of validity are developed by researchers who often generate or adopt more appropriate terms, such as, quality, rigor and trustworthiness (Lincoln and Guba, 1985; Seale, 1999; Stenbacka, 2001). Easterby-Smith, Thorpe and Lowe (2004:43) argued that in social constructivism, validation is based on whether the research ‘*clearly gains access to the experiences of those in the research setting*’. Therefore, as this research is a mainly qualitative featured research, reliability is improved by ensuring a recording of the events as true to form as possible, and as soon as possible after the event (O’Brien, 2009).

Triangulation as used in quantitative research to test the reliability and validity can also illuminate some ways to test or maximize the validity and reliability of a qualitative study. (Golafshani, 2003:597). Mathison (1988:17) notes that *'triangulation has risen as an important methodological issue in naturalistic and qualitative approaches to evaluation control bias and establishing valid propositions because traditional scientific techniques are incompatible with this alternate epistemology'*. Creswell and Miller (2000) see triangulation as a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study. Thus, by using multiple methods in this research study, such as interviews and focus groups, the validity, reliability and diversity in the construction of realities have been enhanced (Johnson, 1997).

O'Brien (2009:138) described three types of validation in qualitative research, which are implied in this research study and can be distinguished as:

- Conceptual Validation: *translating theoretical concepts into empirical variables*. This is related to using multiple sources of evidence;
- Internal Validation: *determining causal relationships between theoretical concepts and empirical reality*, which relates to building cases over time;
- External Validation: *the possibility of generalising relationships one has detected to other people, places, time and cases*, which relates to making analytical or theoretical generalisations.

Within document analysis and in-depth interviews, reliability is enhanced by using the accepted transcription protocols such as manual note taking and digital recorders for transcription purposes. Validity can be improved within qualitative methods by the accurate recording of the events, the use of multiple methods and through a systematic analysis of the data (Silverman, 2001).

Werner and Schoepfle (1987) argue that interviews should always be recorded verbatim. Of the 18 interviews conducted, 18 were digitally recorded in full.

As this research was certain to face the same concerns with social desirability bias, each participant was assured that the purpose of the research was to understand whether it was possible to identify transferability in the design management knowledge, curricula and teaching and learning strategies from the UK to China. The use of multiple methods such as interviews and document analysis, systematic note taking, digital recording devices, instructions given to interview respondents regarding the purpose of research, a systematic analysis of data have each been used to improve both the reliability and validity of data and therefore of theory emerging from this research.

5.3 Alternative Methods of the Study

5.3.1 The Deductive Approach

Marcoulides (1998) defines the deductive approach as a testing of theories. The researcher proceeds with a set of theories and conceptual precepts in mind and formulates the study's hypotheses on their basis. The inductive approach, on the other hand, follows from the collected data and proceeds to formulate concepts and theories in accordance with that data (Marcoulides, 1998). Following from that, the research proceeds to build up theories. While not disputing the value of the deductive approach, the researcher opted for the inductive approach, or the 'bottom-up', as opposed to the 'top-down' method (refers to 5.2.2.1 for further explanation).

5.3.2 Quantitative or Qualitative

Although practitioners from different disciplines may approach research design, implementation and interpretation in a variety of ways, it is asinine to

suggest that one is more important than the other. Determining whether a method is indeed fit for purpose undoubtedly depends largely on the nature of the study being undertaken and the research questions being asked. Questions of a more quantifiable nature lend themselves to a more quantitative approach whereas those seeking data of a more emergent nature require more qualitative understanding. By making each stage of the research process transparent and incorporating more than one method of interpretation, it is believed that the integrity of the current study has been upheld and the charges levelled at qualitative research (see 5.1.2.2 for details), alluded to earlier in the paper, countered (Berkowitz, 1997: 1).

5.3.3 Case Study

By seeking and comparatively analysing accounts and data one would be able to construct a conceptual account that explains the transferability of the UK DME model to the Chinese contexts. Glaser (2001) encourages the researcher to seek maximum difference between comparative groups. He argues that gaining the perspectives of a cross-section of stakeholders is necessary to inform the development of the substantive model.

Researchers have considered doing case study research using comparison study approaches (Eisenhardt 1989; Fernandez 2004). Eisenhardt (1989) discussed the value of using constant comparison methods in case study research and highlighted the value of the relevance factor, due to *'the intimate interaction with actual evidence often produces theory which closely mirrors reality'* (Eisenhardt, 1989: 547).

However, case study methodology has been more associated with a positivist approach, testing pre-determined theories or providing in-depth description (Yin, 1994) rather than building theory. Therefore case study methodology was not employed in this study.

5.3.4 QSR*Nudist

In the 3rd phase of the research, all the interviews undertaken both in the UK and China were examined for the presence of themes and key words were coded and then compared, after three further passes of the data had been carried out. This proved an incredibly time consuming experience and, whilst the experience of previously undertaking a research project indicated that using software, such as QSR*Nudist, greatly improved the ability to collect, compare and make memos to assist in analysing data it was decided to carry out the process manually. For a large project with many multiple data sources, computer-assisted software can facilitate the reliability of the data processes. However, data collection tools are not without their detractors. Rouse and Martin (1994) suggest when using data analysis tools it remains important to know how to use the program features effectively to support the reliability of this approach. Moreover, Glaser (1998:185) warns of the ‘technological traps’ of data analysis tools, like QSR*Nudist, as they can simplify the constant comparative method, provide ‘an easy cop out on the full power of memoing’ and impose time-consuming learning curves. More importantly, as QSR*Nudist did not recognise Chinese characters, in the interests of maintaining comparability and integrity between the UK and Chinese interview data, the scripts were transcribed and analysed manually.

5.4 Chapter Summary

In summary, this chapter has conducted:

- An overview of the research philosophy and strategies; it has highlighted the philosophical basis for analysing both the data collection and data analysis at a conceptual level. To conclude the research strategies of this research study, it can be described as a piece of exploratory research with inductive and a multi-method research

approach. The summary of the research process and methods of this research study have been illustrated in Figure 3.3.

- A description of the methodological approach undertaken for analysing both the data collection and data analysis at a practical level, with an overview of the approach used to select the most appropriate methodology for this study, and a detailed explanation of the appropriate research methodologies.
- Discussions of the rationale for the comparative research design favoured, including research approach; type of data to be collected; data collection tools and procedures; selection of sites for collecting data; type of analysis planned; data analysis and assessing perspectives on the recommendations.

Following is the summary of section 3. It will illustrate the establishment of the research philosophy; methods and research design of the research thesis.

Summary of Section Three

This section provides a comprehensive account of the research philosophy; methods and analysis techniques employed in the research, and concludes with the following key insights:

- Exploratory research is appropriate for examining the development of postgraduate design management strategy, operation and implementation in China;
- Activities to ensure reliability and validity of data are consistent with expectations for mixed methods research;
- Analysis of five data sets into three research phases is consistent with the constant comparative approach, allowing capture of all data.

From the literature review in section two, the research unifying both Pg DME in China and culture roles on knowledge transfer issues requires exploratory, inductive research to investigate the systems and processes involved in developing curriculum, and teaching & learning strategy in a Chinese social and economic environment.

Through the multi-method interpretive study, the DME related policy and curriculum development comparative study comprised of 18 semi-structured qualitative interviews, provides three distinct but comparable data sets, allowing investigation of the research objective from three distinct perspectives: strategic, tactical and operational.

The comparative research study provides formal, publicly appropriate information on current and best policy and practice structures, processes and activities existing for Pg DME engagement both in the UK and China. The interview data provide more information on implementations of design management teaching and how to ensure reliability and validity of the research. Multiple methods were employed, and all the interviews, strategic conversations were digitally recorded, where possible, allowing for the creation of accurate transcripts.

In the following section, the three stages of the sub-findings of the research will be presented, followed by analysis and interpretation of the results in relation to the aims and objectives of the study.

Section Four:

3-Phased Comparative Research Study

Chapters 6, 7, 8, 9, 10, 11, 12

Introduction

The comparative research study of this research study will be a 3-phased setting investigation in which 3 sub-findings will be summarised. The structure and main purposes of the section are:

The 1st Phase of the Comparative Research Study (Chapter 6):

- Conduct a comparative study to analyse the environment of DMED at multiple levels, including cultural, governmental and industrial levels both in the UK and China (*n=17*);
- 1st findings of the research study will be generalised; and the framework at the strategic level of Pg DMED in China will be developed as a major part of 1st findings.

The 2nd Phase of the Comparative Research Study (Chapter 7, 8 and 9):

- Conduct current comparative research to identify the current models of Pg DME through secondary sources both in the UK and China (*n=21*);

- 2nd findings of the research study will be generalised; and the framework at the tactical level of Pg DMED in China will be developed as a major part of 2nd findings.

The 3rd Phase of the Comparative Research Study (Chapter 10, 11 and 12):

- Investigate best practice in Pg DME systems through in-depth interviews of leading academic individuals selected both in the UK ($n=5$) and China ($n=3$);
- Test against Chinese needs through a collection of primary data both in public and private sectors in China($n=10$); and
- 3rd findings of the research study will be generalised; and the framework at the operational level of Pg DMED in China will be developed as a major part of 3rd findings.

Figure 4.1 outlines section four: the Comparative Research Study.

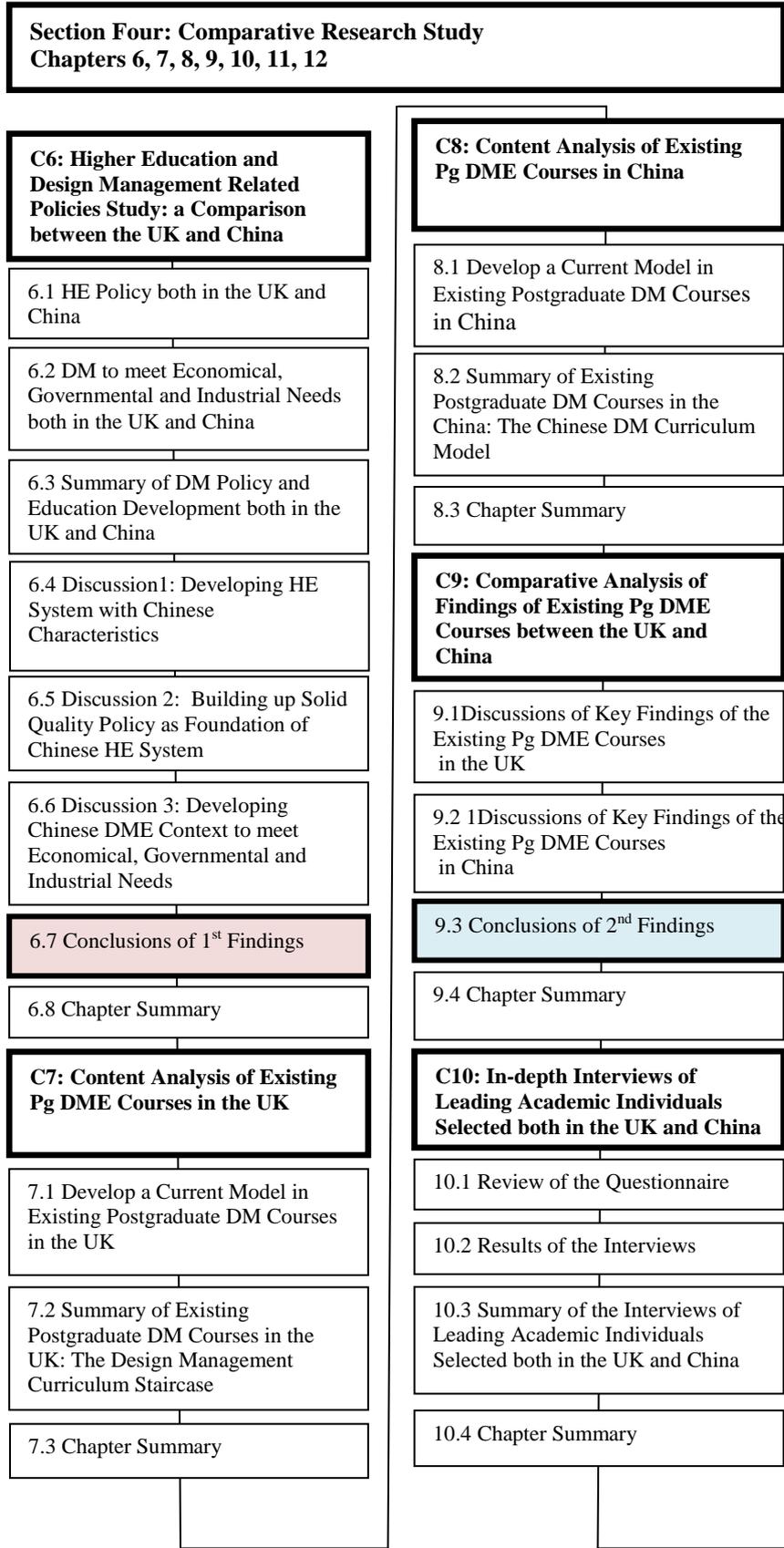


Figure 4.1 Section Map: The Comparative Research Study

Chapter 6:

Higher Education and Design Management Related Policies

Study: A comparison between the UK and China

(First Findings and Discussions)

This chapter will present the research findings from the 1st phase of the comparative research study.

As this study maintains differences in culture, education systems and economic drivers make the transfer complex, thus requiring interpretation as well as translation. This chapter will analyse the environment of DMED on multiple levels, including cultural, governmental and industrial levels both in the UK and China.

This aims of this chapter are to:

- 1) Review and study design management policy both in the UK and China respectively:
 - Explore the historical relationship between HE and the economy in the UK and China;
 - The promotion of design management to meet the needs of both the government and industries in these two countries are explored;
 - Review the relationships of DME, government policy and the industrial context both in the UK and China.

2) Present the findings from the research study of the core elements affecting Pg DMED in both countries, which are comparatively discussed in relation to three sensitive areas identified in knowledge transfer:

- National cultural impacts on DME under the influence of globalisation;
- Quality policy to be ensured in DMED; and
- Design management to meet economic, governmental and industrial Needs.

3) Finally, this chapter will conduct the 1st findings of the comparative research study and also develop a framework at the strategic level of Pg DMED in China.

The discussions will also raise a number of questions stemming from overarching issues in the foregoing comparative study, which will be explored in Chapter 13 and 14. Table 5.2 summarises these questions and signposts where they are undertaken and discussed in Chapter 6.

Figure 4.2 outlines Chapter 6.

Chapter 6: Higher Education and Design Management Related Policies Study: A comparison between the UK and China (First Findings and Discussions)

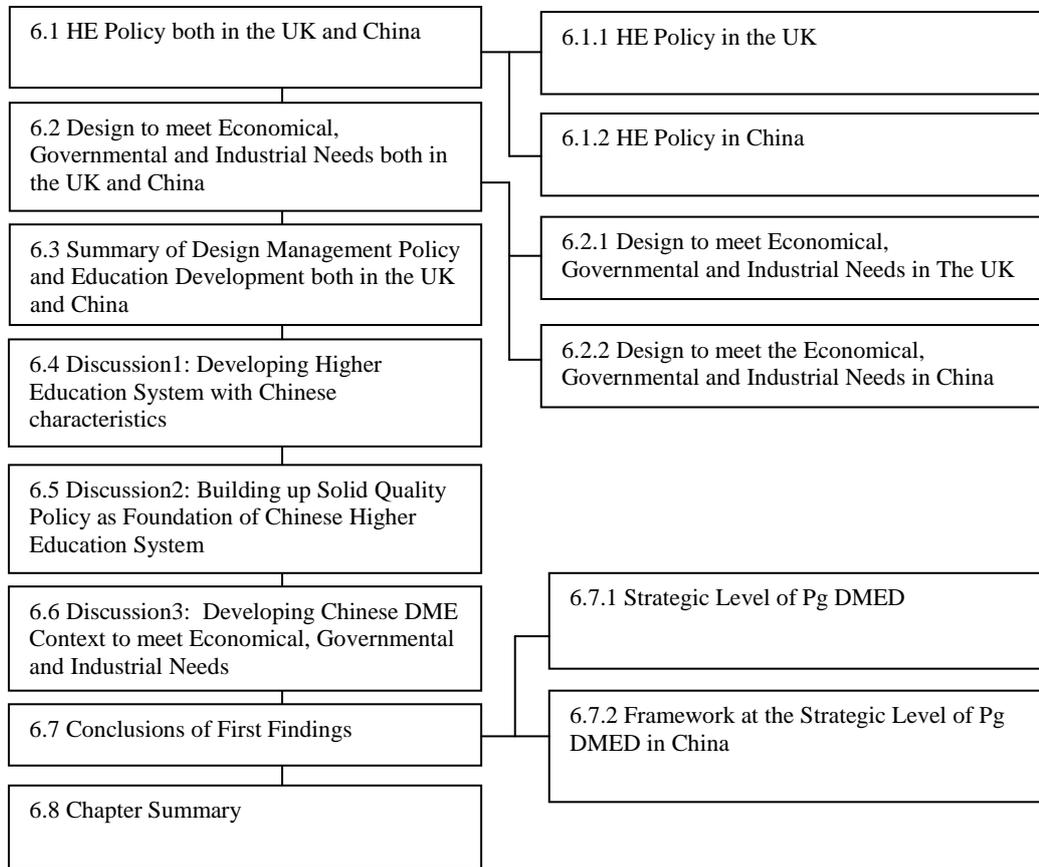


Figure 4.2 Chapter Map: Higher Education and Design Management Related Policies Study: A comparison between the UK and China

The first set of study data include the documents related to the investigation outcomes ($n=17$), including the review reports, the national programme, departmental memos and governmental blueprints. See Appendix 2-3, the key documents of the 1st phase of the comparative research study.

6.1 HE Policy both in the UK and China

This section (6.1) aims to explore the historical relationship between HE and the economy within both the UK and China. It sought to provide a long-term explanation of the relationship between widening access and socio-economic aspects of HE in order to inform current debates. A comparative dimension has been supplied with particular reference to both the UK and China.

6.1.1 HE Policy in the UK

The HE System in the UK has a long history (see Appendix 1-1: the key dates in the contemporary development of HE and UK universities), as well as strong comparative advantages (Richard, 2009; Lambert, 2008) ^{UK Hd5, 6}.

In recent years, high-technology and biotechnology clusters have sprung up around research-intensive universities ^{UK Hd2}. As well as through the arts, humanities and social sciences, UK universities contribute broadly to society, adding greatly to human well-being ^{UK Hd1, 3, and 4}. Above all, for the long term, HE in the UK is about ‘the *students of today who will be the workforce, citizens and leaders of tomorrow; the discoveries that will transform the future; the scholarly insights that will change the way the world thinks and acts*’ (Richard, 2009) ^{UK Hd1}.

6.1.1.1 The UK HE System ^{UK Hd1, 3, 4}

HE in the UK is provided by many different types of institution ^{Hd1, 4}. The types of qualifications awarded by HEIs at sub-degree, undergraduate and postgraduate level are described in the framework for most HEIs. Since the Higher Education Credit Framework for England (HECFE) was launched in 2008, HE credit systems in use in England, Wales and Northern Ireland are compatible with the European Credit Transfer System (ECTS) for accumulation and transfers within the European Higher Education Area

(EHEA), and are used to recognising learning gained by students in institutions elsewhere in Europe^{UK Hd1}.

In 1997, The Quality Assurance Agency (QAA) for HE was established, providing independent assessment of how UK HEIs maintain their academic standards and teaching quality^{UK Hd1}. Academic standards are established and maintained by HEIs themselves using an extensive and sophisticated range of shared quality assurance approaches and structures. This ensures that institutions meet national expectations described in the Frameworks for Higher Education Qualifications (FHEQ)^{UK Hd1, 3}.

6.1.1.2 Developing HEIs that National Economic Needs Require^{UK Hd1, 2, 7}

In the UK, universities, along with other educational institutions, are critical to the creation of intellectual and knowledge assets in the national and local economies. Much research has recognised that the knowledge generated by HEIs will be crucial to underpinning both the UK's recovery from the current economic downturn, and a successful economy in the future (Bassanini, Andrea and Scarpetta, Stefano, 2001)^{UK Hd7}. The Sapir Report (2003) outlined that strengthening investment in universities is regarded as a fundamental pillar of the blueprint for economic growth within the EU. The Universities UK report, in Nov 2009 outlined that the scope and strength of the research and teaching activity of universities has a major impact upon the economy^{UK Hd2}.

As a result, over the last decade, reforms to the HE system, such as the introduction of tuition fees in 2004 and enhanced public funding, have improved the financial position of English universities. Whilst recent investment has greatly improved the financial basis for HE teaching in the UK, ongoing investments are required to maintain the progress that has been made in recent years. For example, The Capital Grants for Learning and Teaching

(CGLT), and subsequently the Capital Investment Framework (CIF), have been introduced^{UK Hd2}.

6.1.1.3 HEIs to meet Students' and Employers' Needs: Supporting innovation and entrepreneurship

Much research has shown that the training of highly skilled graduates is the primary mechanism for creating economic benefit (Salter and Martin, 2001; Martin and Tang, 2007; Pavitt, 1991). Therefore, universities have a vital role in endowing graduates with high level skills. *'It is graduates, primarily, who conduct research both within industry and academia, and who bring to businesses the expertise to draw on new knowledge and innovations from external organisations in the UK and overseas'* (Russell Group Report, Jan 2010: 6)^{UK Hd2}.

Innovation has been seen as essential to economic growth and to the UK's future international competitiveness. In recent years, the quality of the learning experience within the UK's Universities has been further augmented by investment in technology-enabled learning and innovative teaching methods. This helps graduates to develop independent and critical thinking, an entrepreneurial mindset and innovative abilities so much valued by employers (Martin and Tang, 2007).

In the recent NESTA publication in 2009, *The Connected University* notes that *"for the majority of firms, universities are most important not as sources of intellectual property, but for other types of knowledge that are harder to package up and codify"* (Kitson, Howells, Braham and Westlake, 2009). The report also points to the increasing significance of university-business links within the 'open innovation' model, where businesses rely on ideas flowing into them to improve innovation and business performance, rather than on in-house R&D. The Russell Group report highlights the importance of universities

work with existing businesses to support the development of new products and services, and improve business performance. It also pointed out that *‘Through research-based consultancy they help businesses to address specific problems, develop near market innovations and technology, and improve their business processes and management’* (Russell Group Report, Jan 2010: 8)^{UK Hd2}.

However, universities also contribute to businesses ‘human capital’ – not only through the skills of their graduates, but also through the provision of CPD and training. Continued investment in UK universities and the success of these partnerships therefore supports the long-term competitiveness of UK industry. Engagement by universities with local businesses and the wider community also benefits the local economies in the UK. Many universities made special efforts to help the local community during the recession by providing graduate internship schemes, additional career information advice and guidance, networking opportunities for SMEs, and special CPD courses. For example, the university-based graduate internship scheme provided by Imperial College, the ‘Manufacturing Transformation Programme’ at Cambridge, both provide business advice and support product innovations within 150 SMEs^{UK Hd1}.

6.1.2 HE Policy in China

China’s education system has undergone several fundamental changes in recent years to ensure universities play a key role in China’s transition to a knowledge society.

Firstly, China is now one of the largest HE systems in the world and it *‘has more students in tertiary education than the United States and this gap is likely to grow in the future’* (TLRP, 2008)^{UK Hd1}. Figure 4.3 shows the students in tertiary education around the world. The rate of Chinese university expansion is described as ‘phenomenally fast’ (Baker, 2007a).

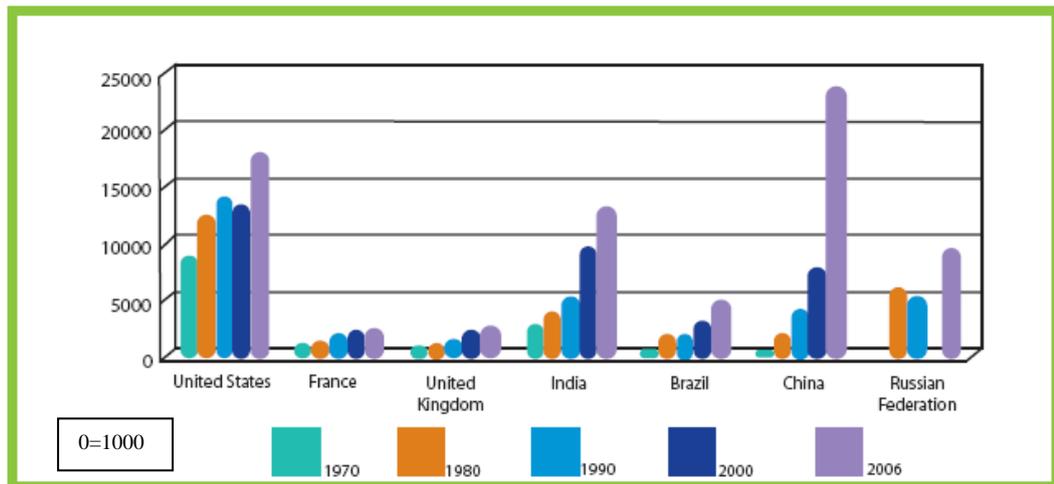


Figure 4.3 Students in Tertiary Education
Adopted from TLRP (September 2008: 6) ^{UK Hd1}

Secondly, the Chinese government has initiated major reforms to streamline and decentralise the administration of the education system. Hundreds of universities have restructured to improve efficiency and competency.

6.1.2.1 Chinese HE System

Before HE reform in the 1980s, HE governance could be characterised as a "centralised" or "state dominated" model in China. Under this governing model, the Ministry of Education (MOE) took responsibility for the designing of curricula, syllabi, and textbooks, student admission, job placement for graduates and exerted control over financial matters, salary scales and personnel issues (Mok, 1996). Provincial and local education authorities were just mediators of national policy.

After the official endorsement of a socialistic market system in the 1990s, strong market forces began to affect educational development. In 1998, China announced its goal of building world-class universities. Its strategy was to concentrate resources on a small number of institutions to enable them to

become internationally excellent. Following high levels of central government investment, China's ten historic universities have climbed international league table rankings for universities (Brandenburg and Zhu, 2007) ^{UK Hd2}.

In the last decades, the Chinese government has begun to allow expansion and privatisation in education. The emergence of private educational institutions, the shift of state responsibility in educational provision to families and individuals, the prominence of fee-based education, as well as the introduction of emerging between HEIs have clearly suggested that China's HE is experiencing a process of commercialisation ^{CN Hd1, 2, 3, 4, and 5}.

6.1.2.2 Strategic Development of HE in China

By rapidly expanding the HE sector, the Chinese government skilfully made use of the drive for globalisation to push forth its local reforms in China. As such, public policy on current educational developments in Chinese societies appears to be undertaken within the capacity and economic growth in a government- directed paradigm and governance.. HE has been a catalyst for monumental social, political, and economic developments ^{CN Hd1, 2, 3, 4, and 5}.

a, The Ongoing 'Quality Engineering' ^{CN Hd2}

As a result of the rapid development in Chinese HE, investment in 2004 was at an estimated 213 Billion Pounds. In 2006, there totalled 1824 Universities in China, in addition to 317 independent institutions, and 145 authorised university branches (Ministry of Education of P.R.C., 2006). Postgraduate student numbers have increased just as rapidly. In 2010, 465,000 postgraduate students were recruited from 1,400,000 applications ^{CN Hd2, 4}. The main reason for this rapid increase in university enrolment was the idea that domestic consumption, promoted by government policy, would satisfy economic growth needs. The national strategy was to encourage HE expansion to stimulate short-

term economic growth in particular. However, the nation faces serious challenges to ensure the quality of managing, teaching and learning in the HE system ^{CN Hd1, 2}.

As a result, the MOE released a “quality engineering” document in “the HE quality of teaching and the educational reform project”^{CN Hd2}. It mainly focused on: 1) Promoting vocational education in the HE system, to balance the graduate employment market; as well as ensure education quality standard; 2) Impetus for innovation and new technology as essential elements in curriculum systems; to improve the quality of teaching; 3) Establishing an HE system to ensure quality teaching and teaching data.

b, Enhance ‘Graduates’ Employment ^{CN Hd3}

In 2008, China’s GDP dropped dramatically, and the pressure on university graduate employment increased accordingly. The international financial crisis accelerated from the hypothesised economy to the entity economy. In China, the pressure continued to increase on national university graduates. In 2009, the number of university graduates reached 61.1 million people, an increase of 520,000 people compared to 2008. Thus Chinese graduates found themselves in an ever more competitive and arduous employment market.

Premier Wen Jiabao presiding over the State Council Routine Conference in January, 2009, determined to strengthen the prospects for university graduates to gain employment through special measures. In 2009 and 2010, national HE policy further aimed to ease the pressure on graduate employment by encouraging university students to explore self-employment, whilst strengthening course design.

c, The Future Plan: "National Medium and Long-term Educational Reform and Development Planning Proposal" ^{CN Hd4}

On April 15, 2010, the establishment of the "National Medium and Long-term Educational Reform and Development Planning Proposal" directing strategic targets until 2020, described national education policy as “*giving priority to the teaching as foundation, enhancing the reform of innovation, encouraging fair competition, and improving the quality*”. It views the strategic subject as ‘human-centred’ educational innovative and developmental ^{CN Hd4, 5}. This is also a statement which suggests that Chinese HE is moving towards making long-term construction plans.

In summary, HE is experiencing a period of significant change in China. A far greater number and type of providers exist, and the student population is both much larger and more diverse than it has ever been. These factors, when combined with increased expectations from government, business and the general public, and set within a period of financial restriction, may be moving towards a new way of thinking about HE in the 21st century.

6.2 Design to meet Economical, Governmental and Industrial Needs both in the UK and China

Many countries have already made national innovation strategies the most important ingredient in design and have subsequently established official organisations, supported by huge investment, to support design. For example, Design Council in the UK, and Design Promotion & Design Policy Department in Japan. Furthermore, in 2000, the Finnish government promoted the “national design policy” proposal, named “Design 2005”. Finland continues the implementation into a national developmental strategy to “become the leading country of design and innovation”. The South Korean government also formulated “the Industrial Development Summary”, which proposed that it,

too, would “become the world’s most powerful design nation” in 2010 (Qian, 2007).

It is generally believed that design in the UK has played a strategic role “to enhance sales and [...] promote trade development” (Ashton and Deng, 2006). China however, has not experienced such a sense of design strategy at national level.

As this study highlights, design in both the UK and China appears to have a strategic role vital to their economies, although the context significantly differs between the two. Given this, promoting design management to meet the needs of both the government and industries in these two countries are explored.

6.2.1 Design to meet Economical, Governmental and Industrial Needs in the UK

In 2007, an economic study focusing on the ‘knowledge economy’ positions the UK as a world leader in trade in creative industry based services, with a 3.4% share of GDP (Mahdon et al., 2007), and UK business spending on intangibles in 2004, indicate a 14% share of spend on design (Brinkley, 2008). Hence, in recent years, economists and policy makers have begun recognising that bringing business and design practices together can stimulate creativity and promote innovation. As former PM Gordon Brown said: ‘. . . *the force of British creativity is renowned throughout the world. People recognise Britain as a hub of creative endeavour, innovation and excellence, and they are drawn to the strength of our creative economy*’ (Foreword to ‘Creative Britain’, 2008).

From the “*designer decade*” of the 1980s (Bruce,1996:407), where manufacturing accounted for a larger proportion of GDP in the UK, to the current, where design and creative industries have become the most important economic pillar of the UK; the UK has become the world's leading country in

creative industries. In February 2008, NESTA published a report on UK industries ^{UK Hd11}. The report highlighted that ‘... *the creative industries may play a greater role in the UK's innovation system than has previously been recognised by policymakers ... creative workers are also more integrated in the wider UK economy than previous mapping studies have implied ... (thus) the UK should start to think in terms of a 'creative economy' rather than a set of 'creative industries'* (Higgs, Cunningham and Bakhshi, 2008). As a result, the debate regarding design thinking has coincided with the dramatic growth of the public sector in the UK. Many have come to believe that the opportunities for design lie in previously untapped areas such as healthcare and sustainability. However, this is more than simply creating inclusive procurement policies to encourage the public sector to spend on design services; it also requires developing infrastructures of delivery and distribution systems and processes, with points of contact and attendant interfaces and experiences. This requires new forms of knowledge, participation in new knowledge networks, and engagement with new kinds of clients.

In 2006, the Competitiveness Summit reiterated the message of how important design and creativity is to business growth and performance. Specifically, the summit was intended to showcase the role of design and creativity in UK competitiveness, discuss how they may be further embedded, and examine future trends; consider threats and opportunities from abroad; and examine the role of education and its relationship to industry (Macdonald, 2006). Nonetheless, one of the premises of the Cox Review was the need to generate ‘... *[c]entres of excellence in higher education for multi-disciplinary courses combining management studies, engineering and technology and creative disciplines*’ (Cox, 2005:33) ^{UK Hd9}. Thus, promoting design management as a process-based creative discipline within a business education constitutes one way of infusing design thinking and inspiring creativity in future business practice. ‘*Design assets (e.g. trademarks and copyright); Strategic assets (e.g. innovative solutions) and People assets (e.g. team-building, consensus*

management and creativity), are in high demand (in the UK)' (Sadowska and Hull, 2008:04).

However, while design claims a wider scope, it also faces the danger of diffusing itself and gradually losing its professional direction. This is evidenced by the findings of a Design 2020 project funded by the AHRC, where one of the biggest anxieties shared among people working in the design sector was the lack of a clear industry identity (Williams and Cooper, 2009). Despite the effort of using design thinking to move design upstream, that message did not appear to have translated into UK design uptake. Consecutive BDI surveys reveal that over the past few years the continuous decline in project income has led to reductions in both industry size and its turnover (Sun, 2010). As a consequence, in comparison with previous decades, *'the UK design industry has changed considerably. It now features a polarisation of industry structure with increasing concerns regarding blurred identity, and the loss of specialties'* (Sun, 2010:73).

6.2.2 Design to meet Economical, Governmental and Industrial Needs in China

In China, the “factory of the world,” price and manufacturing capability have been the key factors in its rapid economic growth. While this competitive advantage shows no signs of abating, China is undergoing a transition from ‘Made in China’ to ‘Designed in China’ (Design Council, 2010 ^{UK Hd10}). This has put significant effort and resources into building an indigenous design capability on the basis of high investment, high-level skills, and a low cost base. For example, the UNCTAD in their World Investment Report (2005) ^{CN Hd6} figured that the number of foreign-affiliated R&D centres in China totalled 700 by the end of 2004, including companies such as Microsoft, Nokia, GE, and IBM. Meanwhile, the country is aiming to attract investment from western multinational companies. These countries are also using design to build a high-

tech research infrastructure that can serve as a springboard for the creation of their own national champions. Chinese businesses are becoming increasingly aware of the value that design can offer to their products and services, and are keen to start moving up the value chain and benefit from the accompanying higher margins.

Compared with the UK, the Chinese design industry is much younger. 90% of China's design consultancies were established after 1995 (Sun, 2010). However, as with many other sectors in China, the speed of development in the design industry is phenomenal. The burgeoning Chinese design capacity was driven by the export-oriented economy of the 1990s. OEMs began to acquire design to meet the demands of their clients, who were themselves in the business of supplying distribution channels with a wide variety of product styles and were looking for product repackaging with quick turnaround times. The practice of design at that time was therefore limited to product form-making or styling.

The nature of those demands led to a situation in which Chinese design appeared deficient in research, planning, and innovation; on the other hand, product sketching and rendering skills in China were highly sophisticated and cost-effective. This in turn led to the rise of an open-sourcing pattern of behaviour, especially when legal restrictions were absent. At the same time, Chinese design industry has developed unique selling points, such as co-location, providing a one-stop-shop service from design rendering and engineering to manufacturing, and rapid product development.

The TLRP'S report (2008:07) pointed out that ^{UK Hd1} *“Companies have consistently tried to improve quality while reducing their costs. But these attempts have been limited by the problems of delivering high-quality goods and services in lower-cost emerging economies. While these issues remain, companies reported a rapid narrowing of this quality and productivity gap,*

which in turn is transforming the way they think about the global supply of talent'. Thus, the new competition for Chinese industry is based on quality and cost, challenging western assumptions about the inherent competitive advantage of the developed economies for high skilled, high value economic activity.

Along with the improvement of national strategy, DME in China is looking forward to further improvement. This is borne out by that fact that industrial design was considered for the first time in President Hu Jintao's recent economic development plan, providing a large top-down stimulus that has accelerated both demand for design and awareness of its value ^{UK Hd10}.

6.3 Summary of Design Management Policy and Education Development both in the UK and China

From the study in this chapter, it can be realised that design in both the UK and China appears to have a strategic role critical to their economies, although the context significantly differs between the two. Given this, promoting design management to meet the needs of both the government and industries in these two countries are explored. However, as far as this study is concerned, the significant conclusions are made for Chinese DMED:

HE is experiencing a period of significant change in China. Along with the improvement of national strategy, DME in China is looking forward to further improvement by the government willing to provide a large top-down stimulus that has accelerated both demand for design and awareness of its value. At the same time, the Chinese design industry has developed unique selling points from design rendering and engineering to manufacturing, and rapid product development. However, with the comparison of the UK experiences on DMED, the main implications of Chinese are:

- Developing an HE system with Chinese characteristics;
- Building up solid quality policies as a foundation of the Chinese HE system;
- Developing the Chinese DME context to meet Economical, Governmental and Industrial needs.

Therefore, these factors, when combined with increased expectations from government, business and the general public, may be moving China towards a new way of thinking about design management knowledge and its education.

6.4 Discussion 1: Developing HE System with Chinese Characteristics

From the comparative study across two countries it can be seen that Britain has advocated the creation of a high-skilled, high-waged economy by upgrading the education and skills of its workforce. However, the Leith Report (2006:3) ^{UK Hd7} argued that *'the creation of world-class skills is assumed to be a route to economic prosperity, reduced income inequalities and social cohesion'*. Later in 2008, in a series of TLRP ^{UK Hd1} commentaries, it commented that such policy prescriptions rest on the idea of a knowledge economy where innovative ideas and technical expertise hold the key to the new global competitive challenge. While Britain's workforce can no longer rely on manufacturing jobs to provide a living wage, as these jobs migrate to low-cost economies, it is commonly argued that Britain is well placed to become a 'magnet' economy, supplying the global economy with high skilled, high waged workers. However, the recent success of China in moving into the production of high value-added, high-technology products has caused political leaders and their advisors to re-evaluate the global economic challenge. The OECD Report (2007) acknowledged that economies such as China were moving up the value chain to compete with western organisations for high-tech products and R&D investment ^{UK Hd8}. Thus, within this race, education, knowledge and skills assume ever-greater importance. The challenge is to outsmart national

economies - whether established or emerging - in the ‘knowledge wars’ of the future (Ashton, Brown and Lauder, 2006).

Nevertheless, under the re-evaluation that has accompanied this new insight, a win-win scenario emerges, not only through the quality of the high-tech goods produced in China, but also through the ability of Chinese economies to introduce change, innovation and productivity growth. The policy implications are to support innovation and entrepreneurship by producing ‘more highly skilled workers’ through education and training policies, in order to sustain a shift toward more value-added activities that might remain within the economies in China (TLRP, 2008)^{UK Hd1}.

6.5 Discussion 2: Building up Solid Quality Policy as a Foundation of Chinese HE System^{CN Hd3}

As part of the globalisation process, Chinese organisations are exposed to quality related technology and management know-how as well as international quality standards and practices (Lee et al., 2001). In keeping with the socio-economic and cultural transformation that has placed newer demands on the educational system, the Chinese HE system in an attempt to react to greater responsibility and accountability and increased expectations by stakeholders, finds itself in a market-oriented environment with internal and external customers. Thus the system has been pressurised into shifting its focus from one of quantitative expansion to one of emphasis on quality.

To meet the new requirements of a market-driven economy, the Chinese HE system in particular, (Chin et al., 2001) believe that Chinese universities need to transform themselves into ones that are consistent with the total quality management (TQM) paradigm. For example, Chinese universities should shift their emphasis from student population to management and teaching quality. However, “delighting the customer (students)”, is not only the rule for survival

in the long run, but also the core message of total quality management (TQM). Hence, there is a need to identify and apply the relevant concepts of TQM to each and every aspect of academic life; that is, to the teaching, learning and administrative activities (Sangeeta Sahney, Banwet and Karunes, 2004).

The ISO 9000 standard term generally used to '*describe the set of worldwide standards for quality management systems*' (BS 7000-10, 2008:29) sits comfortably with an education institution's quality control. Since 1998, university education administration in China began to apply the ISO 9000 standard, establishing a quality control system. For example, the system has been implemented in Harbin Industry University, Shanghai Marine Transportation Institute and the National University of Defence Technology. The Ministry of Education carried out a further seminar in January, 2009 on Chinese universities' quality control. It deferred to the ISO 9000 standard, demanding strict control on the essential factors that influence quality of teaching, thus in turn guaranteeing the quality of students.

Xu and Wang (2009) point out that the application of the ISO 9000 standard can build on the previous quality management system, to promote better scientific, standardised and rational postgraduate education management in China. In this system, what the 'organisations' (HE institutions) provide are not products, but 'talented people' (students); the student is not only a 'passive acceptance of pedagogy '(the final product), but also a customer. Simply, ISO9000 quality can ensure systems can gradually transform Chinese HE institutions' systems from the school-centred to customer-'student and employer centred'.

However, as Pun (2001) points out, making such a transformation through international standard methods (such as TQM, ISO 9000) is difficult for Chinese universities because it often requires not just a change of techniques, but also a change of corporate cultures, systems and practices. As China's

economy continues to grow at an extraordinary rate, with ever evolving business practices, more research is needed to document and provide guidance for successful transition.

Due to the speed of growth in Chinese HE, HE is said to be in a dilemma. On the one hand the main concern is the need for an employee surveillance method to guarantee fairness, relevance, accountability and teaching & learning quality in HE; on the other, is the need to provide suitable independency, financial safeguards and the flexibility for the institutions to make the corresponding response to market demand. Saner-Yiu (2008) believes that the solution is to build third party supervision mechanisms, thus providing an efficient and balanced education system, to guarantee the quality of HEIs. For example, the UK experience highlights improvement through a series of standards and standardisation use; as well as third party participation in HE organisations.

The general standards raised could duplicate uses internationally or domestically. Third party organisations who refer to these do not belong to the ministry of education, but have been given management permission to supervise HEIs. This method has been largely employed in developed countries, such as the UK, Switzerland and other EU member states. Standardisation of the procedure from the third party provides a powerful tool to formalise mechanisms and patterns.

As such, the government no longer provides 'direction and control' of the operation, rather a 'participation and surveillance' working pattern. The government perceives an 'expected' standard and standardised process to achieve goals in 'flexible' standard methods. The separate operating agency not only ensures these standards, but also participates with other stakeholders on the formulation of quality standards.

6.6 Discussion 3: Developing Chinese DME Context to meet Economical, Governmental and Industrial Needs

In the UK, product design and related design services (e.g. prototyping and engineering design) have faced significant challenges in retaining clients where the role of manufacturing is decreasing (TLRP, 2008). At the same time, the growth of the public sector in the British economy has created new opportunities (i.e. service design and strategic design). Design thinking is therefore a welcome addition to the design world, given that to some extent it answers what design can do to cope with the shift in demand. However, when the Conservative Party regained power in early 2010, the economic agenda appears to have shifted away from public sector funding (Sun, 2010).

The conclusion can be drawn from the review of the design context in China (see 6.2.2) that government education investment is used in developing design schools. Anecdotal evidence suggests that 1,000 schools have been set up over the last decade, producing more than 250,000 design graduates a year (Design Council, 2010:10). Generally, in both policy and education, design is understood as a key element of innovation and closely aligned with the STEM subjects (science, technology, engineering and maths) (Design Council, 2010) ^{UK Hd10}. Therefore, *‘Technology is a huge driver of innovation in China and clearly design is perceived as a key translator of science and technology, and increasingly as a means of meeting social needs’* (Sun, 2010:74).

However, internationalism is a pervasive attitude with designers working in multi-national companies and global networks established in education. The Report of TLRP 2008 ^{UK Hd1} on ‘Education, globalisation and the knowledge economy’ found evidence that China was content with doing the ‘body’ work within the global economy while the ‘brain’ work is left to the developed economies such as Britain, Germany, Japan, and the United States. However, since the rapid expansion of tertiary education in China, focus is now

concerned with attracting investment from western multinational companies. These countries also exploit it to build a high-tech research infrastructure that can serve as a springboard for the creation of their own national champions. There is a burgeoning domestic market for design and more of a distinction between designing for the home and overseas markets. Therefore, *'China is rapidly developing its design ability, learning from the 'best of the west' as well as building on their own significant creative and cultural backgrounds'* (Design Council, 2010:5) ^{UK Hd10}.

As such, under the influence of globalisation, an investment-driven economy in China has created significant demand for design services; it has also shaped the pattern of development for the Chinese design industry. If it wants to move upstream in the global value chain, China will have to develop its economic competence away from relying on low-cost and labour-intensive structures to the 'higher skills at reasonable cost and high flexibility' model. At present, however, the studies of TLRP suggest that the off shoring of high-skilled jobs from the west to east will increase in significance as companies gain the confidence and capability to locate high-value activities in low-cost economies. Although it is difficult to gain an accurate picture of the scale of off shoring, which takes different forms, its impact on employment is likely to be concentrated in sectors such as IT, financial services and the automotive industry. Today, relocations involve front as well as back office functions, including research, management and design (TLRP, 2008).

From changes in global practices and high growth rates in design education, demand has led to the expansion of design business in China, and innovation is seen as the key to the success of this transformation. However, until the perception of design in China shifts from the role of styling products to one of translating creativity into innovation, this is not likely to happen. Moreover, it will be difficult for it to happen until the development of design infrastructure

catches up with the rapid development. This has left many areas lagging behind and created huge gaps.

This is evidenced by a lack of design infrastructure, as well as the prevalence of free pitching, or price-cutting to grab clients, and imitation of the work of others. On the other hand, the booming demand for designers is significant and has resulted in a shortage of designers, especially given the short history of design education in China (only since 1998 has the term art and design been used to replace art and craft as a degree designation). According to Prof. Liu Guanzhong (2010), the head of School of Art in Tsinghua University, China, the role of design innovation has not attracted attention at national level. And the challenges can be summarised into three parts:

- Firstly, it is the imperfect nature of the national design innovation system. China's "national innovation system", in particular the application of knowledge systems and development, is a little way off completion. The application of knowledge still takes the form of "imitation", and only sees a "technological" role rather than design of "integrated innovation" effect. Design remains a decorative function rather than the need for a deep understanding of the role of industrial design in terms of "production relations".
- Secondly, the organisational models and mechanisms required to promote collaborative innovation have not been formed due to poor national leadership. According to Liu, the "Collaborative innovation model" requires the collaboration between technology, business, industrial design, design education and other related sectors. Unfortunately, in China, this model has not been recognised and implemented. A "Design-centre chain" in Chinese industries has not yet been formed and perfected. The process of design from concept to participation needs to be strengthened, to incorporate "system

innovation” into Chinese industries.

- Finally, basic design management research at national level has largely been overlooked, due to weak government support. Although the government's role and knowledge of design management is gradually improving, there are still aspects needed to improve attention and strengthening, such as policy making, management systems and financial investment. *‘An essential ingredient in this maturing process will be the development of a respected body of research and research methodologies’* (Walton, 1992:07). The research requires a transformation from "basic design research" to "applied design management research." State and local governments need to establish a comprehensive discipline, to encourage the social system sectors to explore the needs of China's design and research, and develop an integrated service platform and industry chain. Lockwood (2002) also suggested that two types of investigation on design management research are necessary. The first is concerned with conceptually exploring the dimensions of design in creativity; and the second includes analytically comparing design management hypotheses with day-to-day decision-making in actual firms. In short *‘the theoretical work is useful in defining issues of domain and language, helping to find bridges between the worlds of design and management. The pragmatic studies are valuable in refining the methods and practice of design management’* (Walton, 1992:08).

To conclude, the UK and China show significant differences in industry dynamics, leading to a disparate DME system being deployed in each country. However, these differences are rooted in economic development and government policies to a large extent. The evolution of design roles in industry in each country has mirrored the shifts in the government’s economic agenda.

More specifically, economic structure has determined the nature of design demand, further dictating the design management required (Sun, 2010). China's DME has to face the challenge of providing the intelligence for technological and economy growth in the country. It has many subsets; all of which are believed to embody innovation and creative processes. At the same time, this incredibly fast growing design industry and education sector need strong governmental support and ambitions to move towards 'Designed in China' instead of just 'Made in China'.

6.7 Conclusions of First Findings

6.7.1 Strategic Level of Pg DMED

Strategic level of Pg DMED embraces, among other things, envisioning the future of DME. Strategic Pg DMED involves the creation of strategic, long-term vision and planning for HE and deals with defining the role of design management study within the institution. The goal of strategic DME development is to support and strengthen the national/international vision, by creating design management leadership. It includes promoting design leadership; managing design in strengthening national cultural impacts on innovation and ensuring that Pg DMED becomes a central element of formulation process strategy to meet economic, government, HEIs and industry needs.

Strategic level Pg DMED is responsible for the development and implementation of a design management programme that influences the design management vision, mission and positioning. It focuses on the long-term capabilities of DME.

6.7.2 Framework at the Strategic Level of Pg DMED in China

Although initiatives promote design in different complexities in the UK and China, scope and focus on specific targets tend to address general or economic objectives (Sotama, 2004). From the comparative analysis of the HE system and design policy in China, it can be concluded that design management has dedicated three issues around Pg DMED to:

- **Promote publicity:** increase awareness of design and development of the design sector, and attractiveness to national and international investment (national and international dimension);
- **Support business:** increase the use of design by companies, particularly by growth of the public/service sector in recent years (supply and demand dimension);
- **Educate designers:** improve design education and research (academic dimension).

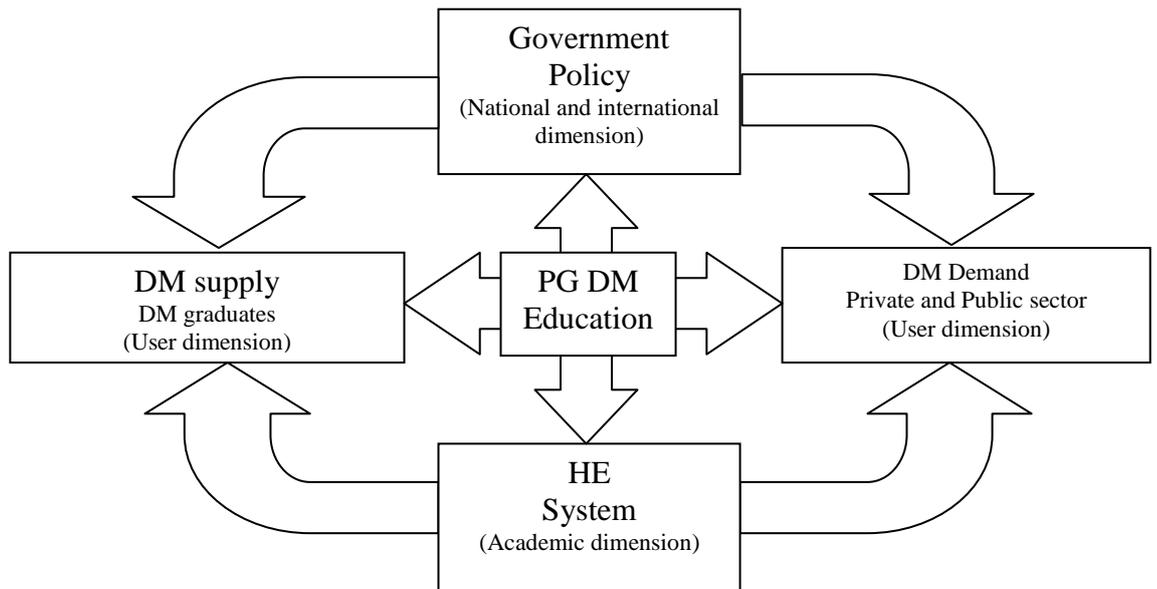


Figure 4.4 Implications of Developing Chinese Postgraduate Design Management Education (Pg DME) Context to Meet the Chinese Policy Demands

Therefore, the framework at the strategic level of Pg DMED in China can be explored by mapping the role of each stakeholder in the Pg DME process, (see Figure 4. 4).

In Figure 4.4, the implications for Pg DMED in China can be explored by mapping the role of each stakeholder in the Pg DME process. Stakeholders include government departments, and academic institutions. Also in the equation are the volumes of design management supply (meaning design management graduates) and design demand (meaning organisations that support design management, in both private and public sectors).

The arrows linking all the stakeholders represent a potential circle for developing Pg DME. Political economists (Galbraith, 1983; Muthoo, 1999) suggest that the nature of economic power lies in the balance within the supply-and-demand system. In this way, the government is able to deploy relevant policies to intervene with this balance (Sun, 2010). Analysing how this

balance can be influenced by each of the key stakeholders is therefore valuable in informing DME development.

a, Government Policy

Design demand has been growing at a significant rate due to the high growth rate of the national economy in China (see 6.2.2). It was in the 1990s that the Design Management Institute (DMI) first dedicated two issues to design policy; the practice of design promotion has evolved considerably (DMJ summer 1993; 1996). The published articles have differentiated design policy into two emerging trends: in the national design organisation, and in programmes fostering the integration of design within the larger business context (Walton, 1996).

However, the Chinese government's efforts appear to focus on design investments in tangible, if less lucrative, hardware and process technologies. This is evidenced by a series of policies from both central and local governments (Sun, 2010; MLP 2006-2020; McGregor, 2009). For example, the Chinese National Development and Reform Commission (NDRC) suggested local governments take a number of measures to encourage the development and implementation of high-tech business, by increasing government investment, establishing specific funding, and exploring the use of tax incentives and government procurement (also see 2.3.2). As a result, China is one of the biggest investors in energy technology and research; it is the world's largest producer of solar panels. However, a majority of Pg DME considers that, even more important than investment is "software", such as:

- Knowledge and skills development, and a healthy business environment regulated by the government. Among the policy-making priorities would be regulating engagement in the design management curriculum, building leadership to champion design's

role in innovation, and developing a regulations and legislation system for design management in China.

- Organisational models of collaborative ‘innovation’ in design management. This requires the collaboration between technology, business, industrial design and design education and other related private and public sector organisations.

b, Postgraduate Design Management Education (Pg DME)

‘Education should be an integral part of design policy, ensuring that the number, quality, and expertise of design professionals are sufficient to meet the expectations envisaged by the policy’ (Raulik-Murphy, Cawood and Lewis, 2010: 55). However, coordinating a policy for education with a policy for design promotion is a difficult task and China is not an exception. The main difficulty stems from the fact that *‘Responsibility for agendas often belongs to different government departments, and a high level of coordination is required to implement a coherent policy strategy’* (Raulik-Murphy, Cawood and Lewis, 2010:55).

In terms of Chinese DME, national policies must embrace challenges and work to ensure the best conditions for the DME of appropriate design management professionals to enable design strategy. From phase one of the comparative research study, the critical analysis on national policy, HE principles and design policy study both in the UK and China, the strategic, long-term vision and planning for Pg DMED in China can be summarised by following three points.

- Firstly, taking innovation as the empowerment of development. The DME development's vigour is decided by the system mechanism of innovation. In the "National Medium and Long-term Educational

Reform and Development Planning Proposal" (see 6.1.2.2) ^{CN Hd4and}
⁵ the word 'reform' appeared 96 times, explicitly, "innovation is the power of the reform"; and "the Innovation Reform" are two examples which highlight how important the principle is to Pg DME.

- Secondly, stressing quality is core. The educational planning proposal pointed out explicitly that improving quality is the core duty of HE development, improving the quality of Pg DME is the priority of its development concept.
- Thirdly, enhancing the internationalisation of DME via a unique Chinese path. Commentators suggest that, in various countries, HE is concerned with increasing student knowledge through university study, by raising critical awareness and thoughts that enable the student to analyse questions. However, the means by which various countries' achieve these aims is vastly dissimilar. Each country needs to unify its own national condition and cultural forms in its own way. This requires Pg DME to have an international vision with an eye on a national, 'Chinese context'.

6.8 Chapter Summary

In this chapter, firstly, the environments of DMED in both the UK and China have been investigated on multiple levels, including cultural, governmental and industrial. The historical relationship between HE and the economy, within the UK and China has also been explored. Furthermore, the promotion of design management to meet the needs of both the government and industries in these two countries has been examined. Moreover, the relationship of DME, government policy and the industrial context in both countries has also been defined.

Secondly, the 1st phase of the comparative research data has been identified into discernible patterns. The main categories have been determined and issued domains that emerged as the most important factors. Through this research, it has been ensured that essential data are collected and categories have been defined in a bid to begin to understand the research problem. By investigating the relationships between these data and the literature review, numerous contingent factors have been developed and are explored in the 2nd phase of the comparative research study.

The major finding in the 1st phase of the comparative research study is that, in order to inform Pg DMED at the strategic level, the Chinese government needs to be able to deploy relevant policies to intervene in ‘supply-and-demand systems’ in order to balance Pg DME (Galbraith, 1983; Muthoo, 1999; and Sun, 2010). This system is influenced by Government; the HE system; both Private and Public sector and students themselves.

The 1st phase of the comparative research study has also formed the basis of the predictive determinants to be further researched in the next phases (2nd and 3rd), these are the implementation of:

- ‘Innovation’;
- ‘Quality’; and
- ‘Cultural influences under a global trend’ on Pg DME via curriculum design and teaching & learning strategies.

What follows (Chapter 7, 8 and 9) is the study of the identification of current models of Pg DME by secondary sources both in the UK and China. The analysis, discussions and findings from existing Pg DME courses both in the UK and China will conduct a development of a conceptual and operational framework for Pg DMED on a tactical level. While this generated a large amount of data, it served to focus on the forthcoming work, and also indicates the breadth and complexity of Pg DME in China.

Chapter 7:

Content Analysis of Existing Pg DME Courses in the UK

This is the 1st of three chapters presenting the research findings from the 2nd phase of the comparative research study.

Courses in design management have been established independently in western countries, and the design management curriculum in each has been developed from a generic framework for universities to customise in light of their specific situations. In this chapter, a model of the core curriculum for managing design in existing postgraduate courses in the UK will be discussed. This will establish the content which Pg DME degree courses currently deliver and skills developed, and a model of the core curriculum will be described, to identify sensitive areas in knowledge transfer.

Thus the aims of this chapter are to:

- Identify the current models of Pg DME in the UK through secondary sourced material.
- Develop a current model of core curriculum content in existing Pg DME courses in the UK.
- Provide central information on the existing Pg DME provision.

Figure 4.5 outlines Chapter 7.

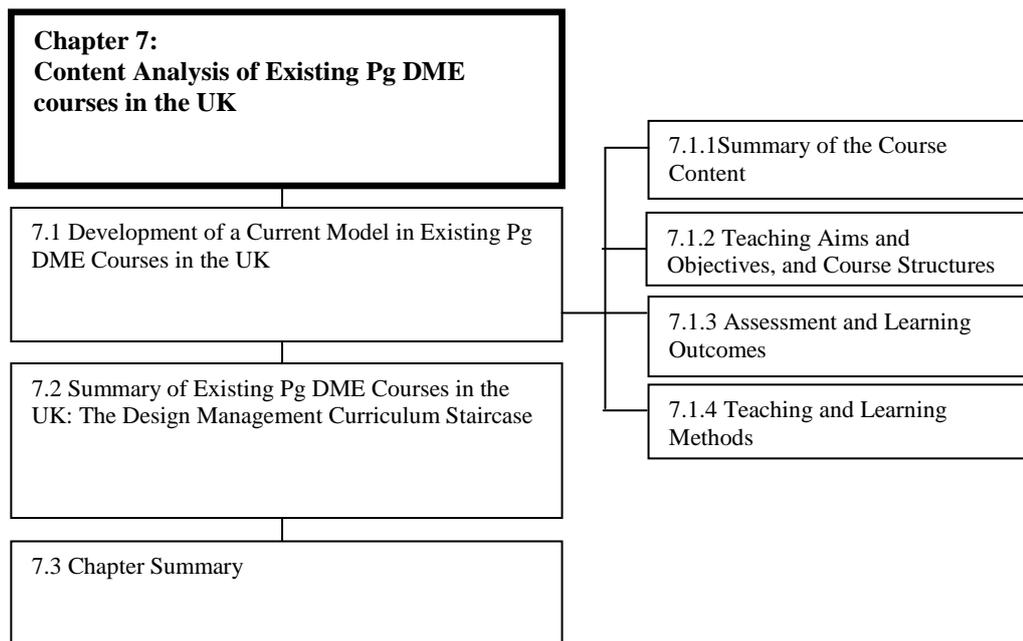


Figure 4.5 Chapter Map: Content Analysis in Existing Postgraduate Design Management Education (Pg DME) Courses in the UK

7.1 Development of a Current Model in Existing Pg DME Courses in the UK

The second set of data includes the documents of current models of Pg DME sources both in the UK and China (UK $n=14$, see Table 4.1), including the handbooks, and course descriptions.

The aim of the review is to situate and analyse postgraduate provision from the viewpoint of a UK-based HEI looking to expand its current postgraduate provision. This includes an investigation of common elements in the DME system by sampling and analysing individual selected design management programmes in the UK. Table 4.1 provides a summary of the participating institutions and programmes.

University and Institutions	School/Faculty	Course Title
Brunel University	School of Engineering and Design	A: Design and Branding Strategy MA; B: Design, Strategy and Innovation MA
Staffordshire University	Faculty of Arts, Media and Design	MA Design Management
Birmingham City University	School of Fashion, Textiles and 3D Design	MA Design Management
De Montfort University	Faculty of Art and Design	A: Ma/Msc Design Management; B: Master of Design Innovation (MA/MSc/PGDip/PGCert); B: Design Entrepreneurship (MA/PGDip)
University of Salford	School of Art & Design	A: MSc/PgDip Design Management; B: MA International Business and management for Designers
University of the Arts London	A: London College of Communication (LCC) (*Discontinued from 2009) B: Central Saint Martin College of Art and Design (CSM)	A:MA /Postgraduate Diploma in Design Management B: MA Innovation Management
The University College for the Creative Arts	UCA Epsom	A: MA Innovation & Brand Management; B: MA Arts Management
Lancaster University	Lancaster Institute for the Contemporary Arts (LICA)	A: MA Design Management B: MA Sustainability, Innovation & Design
Northumbria University	School of Design	MA Design Management
Centre for Competitive Creative Design (C4D)	Cranfield University & University of the Arts London (LCC)	A: MDes Design & Innovation for Sustainability B: MDes Innovation and Creativity in Industry
Kingston University	The Faculty of Art, Design & Architecture	MA Design for Development
University of Wales Institute, Cardiff	Cardiff School of Management / Cardiff School of Art & Design	MBA Product Development Management
Imperial College London, Design London)	Imperial College Business School	Innovation, Entrepreneurship and Design course

Table 4.1 Summary of Participating Institutions and Programmes in the UK

The curriculum is the central core of any academic course. It covers the content of courses and, increasingly in the UK, is required by government or professional bodies, to include subjects which are considered core to the subject area and generic areas desirable in all degree programmes. However,

curricula are still varied across courses for the same award as institutions believe that it allows differentiation and the freedom to take advantage of local or institutional need and strengths (also see 6.1.1).

The development of design management courses and their curricula in the UK has been driven by various schools of thought regarding their purpose and structure. Some postgraduate education courses believe it is desirable to have both designers and managers on the same programme. A final curriculum driver is whether the course is fully integrated or structured as part of or as an ‘MBA’ type programme where modules deal with different business functions which are then drawn together by the student and applied to the design context. The assumption is that theoretical models pertinent to both the design community and the management community will be a way to explain the theory of design management.

In order to obtain a detailed understanding of what the Pg DME curriculum entails in the existing participating institutions in the UK (and China in Chapter 8), the study identified five criteria based on the extensive desk based search. These criteria appear to bear upon the success and failure of design management postgraduate courses, namely:

- Criterion 1: Course Content
- Criterion 2: Teaching Aims and Objectives
- Criterion 3: Course Structure
- Criterion 4: Assessment and Learning Outcomes
- Criterion 5: Teaching Methods

7.1.1 Summary of the Course Content of Postgraduate Programmes in Design Management

This includes the proportion of a curriculum that should be devoted to the theoretical aspects of design management; student knowledge of technical aspects of design management; and the emergence, in practice, of core content. Appendix 1-2 contains a summary of the course content of postgraduate programmes in design management.

Course curricula are developed in the context of a range of influences involving government, labour market trends, perceived needs of employers and resources within the institution (also see 4.1 and Chapter 6). In the UK, degree course curricula commonly contain three main elements – generic or transferable skills including learner autonomy, contextualising input and discipline specific content. From the design policy study reviewed in the last chapter, it can be seen that the UK government has placed considerable emphasis on the first element requiring flexible employees who will move between industries, set in the context of diminishing manufacturing and the continued dominance of service industries (Holden and Johnson, 2002). The impact of employers' needs is also a potent force in curriculum development and here there is the potential for tension between short-term usefulness of graduates and longer-term educational benefits. There is however an acknowledged core to the subject which will be found in all courses (see Figure 4.6 for the breakdown of course content of postgraduate programmes in design management).

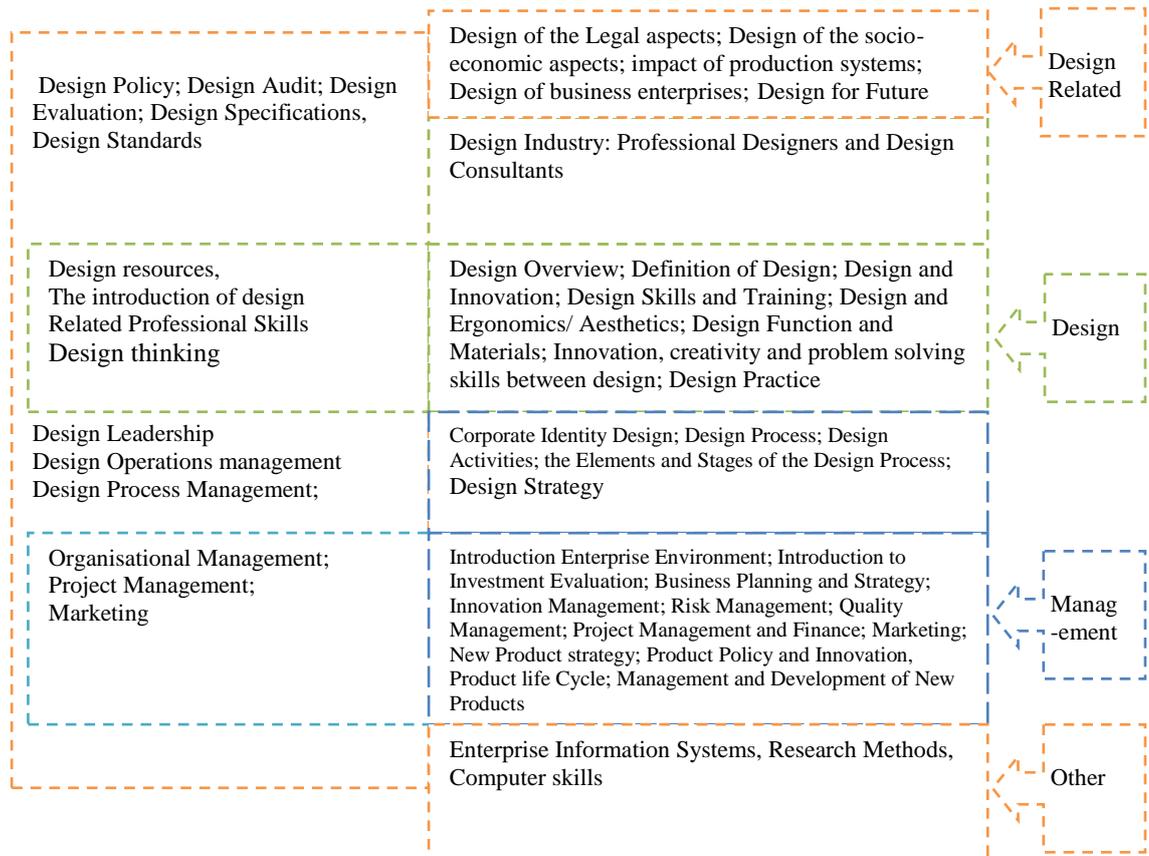


Figure 4.6 Course Content of Postgraduate Programmes in Design Management, UK
Based on Cao and Wang (2009)

A look at the curricula of the schools under review confirms that the core subjects typically include a combination of topics. For example: design in an economic and business context, design policy making, managing design projects. However, exactly which subset of these a student receives and in what measure depends on the school's attention and the choices the school makes on optional subjects. Segev, Raveh, and Farjoun (1999) suggested that this core foundation is very different even for the most select group of leading schools in the west. This variance in what each school considers being the crux and substance of an education in design management is not unusual because design/business schools evolve differently from one another. Moreover, student

profiles differ from school to school in large part due to the self-selection of student applicants who consider the curriculum offered at each school (Goorha and Mohan, 2010).

There is a general consensus amongst the institutions reviewed which are generally divided in two models; specialism-led and market-led. Specialism-led developed from undergraduate provision, for example Design Management study at Staffordshire University. Most postgraduate programmes with a heavy study practice bias were developed from undergraduate provision as the majority of design education courses historically focused on undergraduate teaching. This seems a convenient reason to use the expertise of the staff in their individual specialism and translate it to post graduate teaching. However, there is an inherent danger of simply treating postgraduate education as an extension of undergraduate teaching.

The second model is market-led, which developed from current market and social conditions; for instance, the Centre for Competitive Creative Design (C4D) in Cranfield University. This model relates to programmes which have been developed either as a response to an independent review of skills (also see 4.3); for example the Cox review (2005) and Leitch review (2006) or through an internal review of potential markets. The Cox review stated that *'the development of business skills within design is by far the most important issue for designers. Although design excellence is considered a prerequisite the successful business, it is business acumen that is the differentiator to real success'*. However, the Leitch review stated that *'a highly-skilled workforce drives innovation, leadership and management, enabling business to compete in the global economy ... The review's world-class ambition requires increased engagement and investment from employers with higher education to drive management, innovation and workforce development'*.

7.1.2 Teaching Aims and Objectives, and Course Structures of Postgraduate Programmes in Design Management

7.1.2.1 Teaching Aims and Objectives of Postgraduate Programmes in Design Management

Broadly speaking, educational purposes can be defined in one of two ways: 1) What it is intended that the teacher will do (an aim or a teacher-driven objective); and 2) What it is intended that the student will have learnt, or will be able to do, as a result of a learning experience, (an objective of learning outcome).

In terms of postgraduate design management study in the UK, there is therefore a broad view that each teaching activity involves:

- Setting out the intention of the degree programme or course in terms of the scope of the subject, and the overall learning outcomes sought.
- Setting out what it is intended the student will have learnt or be able to do as a result of the educational experience.

Appendix 1-3 summarises the course aims and objectives of postgraduate programmes in design management in the UK.

A study in the centre for learning and professional development at the University of Aberdeen (1997) suggested that there are a number of circumstances in which aims and objectives can be specified. These are set out in Figure 4.7 in the form of a hierarchy in which the higher levels (for example the degree programme) should determine the nature of the aims and objectives adopted for the lower level (for example a course).

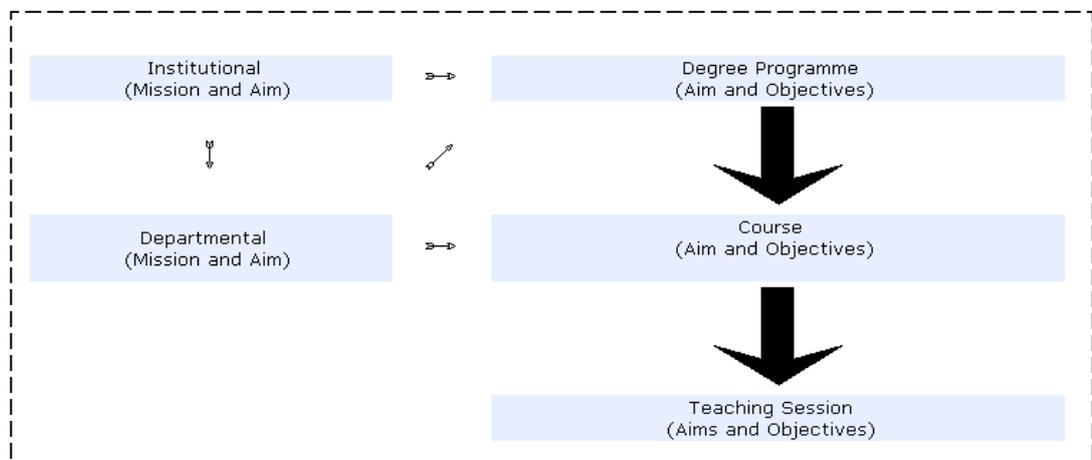


Figure 4.7 The Relationship between Teaching Aims and Objectives at Different Levels

Centre for Learning & Professional Development, University of Aberdeen
26/09/97

In terms of postgraduate design management study, the aims and objectives of teaching are usually determined by the students' varied study backgrounds. Bruce and Cooper (1997) defined two types of courses in design management: 1) for the design and management courses as part of current management study; and 2) other main areas of management in the design professions.

Firstly, design management studies established within the design schools, are more likely to base their curriculum on the need to train students to become design professionals in the management of their professional practice and the identification of competent leadership in the enterprise environment (Borja De Mozota and Dong, 2010). In this instance, teaching aims and objectives are to provide:

- An introduction to management concepts, tools and techniques, such as competitor analysis and business planning;
- An understanding of management roles;
- An insight of design in management language

Secondly, design management study is developed from a management culture perspective. Design processes in MBA studies, for example, aimed to assist MBA students to understand organisational design and management structure design (Blackburn and Chapin, 1994). Students need to consider the design of management knowledge and skills to facilitate the successful operation of the enterprise (Borja De Mozota and Dong, 2010; McBride, 2007). On this particular occasion, the teaching aims and objectives are to:

- Increase the visual perception;
- Impart knowledge of the design process;
- Develop design management skills such as design review and design specifications.

7.1.2.2 Design Management from Design Culture: The design and management postgraduate education model in design schools

From Appendix 1-3, it can be seen that design management study in most design schools in universities, suggest study objectives are mostly concerned with design planning and business abilities, designed to enable students to grasp the comprehensive knowledge skills.

MA courses "Design Strategy and Innovation," and "Design, Brand and Strategy" at Brunel University, for example, are to... "*Prepare students from design and other creative disciplines to design innovative strategies and act as a catalyst for change in the design, branding and related professions, businesses, education and other organisations*". The direction of the principles of the courses also focus on establishing close links between design and management, cultural study, forecasting social change and risk management capabilities.

Wolf, Davis and Vogel (2002) have suggested that, as a teaching area, design management in the school of design encapsulates four objectives, which students learn through their own experience:

- The strategic use of design. For example, the MA Design Management studies in the Faculty of Art and Design, De Montfort University has set up two core modules which emphasise strategic use of design, named the Strategic Markets for Design in the Global Economy and Design as a Strategic Business Tool.
- How to manage the complexity of design. For example, in many universities reviewed in the study, design management courses use seminars and short, medium, and long term projects that teach the discipline to students through their own efforts and interests. Such as the MA Design Management study, De Montfort University. Students have an opportunity to choose one module from business planning for the creative entrepreneur or managing business web presence; or to identify creativity as both theoretical and practical processes.
- How design is connected to business strategy. For instance, the MA Innovation Management at the University of the Arts London has provided students opportunities to explore innovation in relation to services, products and user experiences. Business strategies connected to design are delivered through a range of different learning experiences, from the traditional to the experimental, from student- led to industry-linked.
- How to create a business and make it successful using design. For example, the MA/ PGDip Design Entrepreneurship at De Montfort University is ideally suited to design industry professionals with

the appropriate qualifications and experience, particularly those wishing to start their own companies.

7.1.2.3 Design Management from Management Culture: The design and management education model as relevant content of MBA education

The increasing need for business schools to keep pace with the changing business environment, led to an increased recognition of the value of flexibility in the business school curriculum. As teaching objectives change based on a variety of disciplines, design management study in MBA courses for example, the purpose and objectives are designed to help students understand the design's function in organisations, design process and management of design (Blackburn and Chapin, 1994). This is in order to help students use creative thinking to manage design resources in a scientific and rational way, which implies the efficient operation of business organisations. For instance, the MBA Product Design course at University of Wales Institute, Cardiff (UWIC) aims to develop an understanding of the role of designers and engineers in a company and their interplay with other aspects of the company, such as marketing, sales and finance. This is critical for business success and a very important aspect of business management.

Design management courses within the MBA educational model were designed to build on the premise that people realise the need to design for enterprise management and the importance of social development. However, due to the lack of knowledge of how to merge design with business and play a further role in other aspects, design management courses aim to include design related courses into the management course, in order to train managers to correctly handle the relationship between design and business. Formosa and Kroeter (2002) believed that it was important to acknowledge that design-related curriculum content requires a sustained focus in three critical areas: 1) understanding of design; 2) design culture; and 3) planning design in the

decision making process. The MBA programmes in the UK are structured more or less in the context of managing design as a strategic resource in organisations. For example:

‘Design London’ delivers design-led innovation modules on four MBA courses at Imperial College Business School under the auspices of Innovation, Entrepreneurship and Design (IED) (NESTA, 2010). As well as Saïd Business School, the University of Oxford has been offering an MBA elective in Design Leadership since 2005. It has run projects, which have seen groups of up to 48 MBA students a year working with designers from institutions including the Royal College of Art and London College of Communication (LCC) (NESTA, 2010).

To conclude, in terms of DME in the implementation of business administration, many postgraduate programmes were designed to create opportunities in design and management expertise. Thus, Pg DME courses from management cultures aim to develop training objectives in the management of professional designers and training managers and the ability to properly manage the design (see Table 4.2 an example of MBA, Innovating and Designing Services programme in Imperial College London).

Course Title	Course Aims and Objectives	Skills
MBA courses at Imperial Business School under the heading of Innovation, Entrepreneurship and Design (IED)	Providing insights into the challenges of introducing novel products and services to market. And explore emerging innovations in science, technology, design or business. .	<ul style="list-style-type: none"> • The practical skills needed to assess commercial potential of new products or research under development • The strategic thinking required to effectively address the challenges of introducing new products to market • The skills necessary to build a strong client-consultant relationship and deliver value through the project to the client • Communication skills in a multi-disciplinary team under time pressure.

Table 4.2 MBA Innovating and Designing Services Programme in Imperial College London

This illustrates that the MBA Design Management programmes are designed not only for the cultivation of basic skills and simple design theory, but rather focus on training of design leadership in business management, legal and marketing strategies, and on cultivating the ability of design management in business managers. This mode of education training for professional designers not only provides the necessary product innovation capability, but also controls the entire design process for rational guidance, management and control.

7.1.2.4 Crossing the Boundary: Multi-disciplinary Design Management

From the research it can also be seen that a wide range of courses, centres, research programmes and knowledge transfer initiatives have been established. UK DME is investing in new ways of teaching and researching ways in which design works alongside and in collaboration with other disciplines. Numerous methods have been employed such as:

- Collaborations between institutions;
- Multi-disciplinary masters courses;
- New courses and centres in development;
- Multi-disciplinary research Centres.

a, Collaborations Between Institutions: Some of the most high profile initiatives to embed multi-disciplinary approaches into postgraduate research and teaching are the centres where two or more institutions have chosen to collaborate.

For example, 1) ‘Design London’ builds on a heritage of cross-institutional collaboration between Imperial College Business School, Imperial College Faculty of Engineering and the Royal College of Art. ‘Design London’ was created in 2007 and offers teaching, research and business collaborations, it also established an Innovation Technology Centre, a programme of industry

services and executive education called ‘Design Connection’; 2) The Centre for Competitive Creative Design (C4D) is a partnership between Cranfield University and the London College of Communication, University of Arts London, established in 2007. It offers taught masters courses run across the two institutions and runs a research programme, as well as providing services for industry.

b, Masters Courses: Many of the institutions starting to develop ways of embedding multi-disciplinary team working into design teaching have chosen the route of developing masters’ courses where modules are shared across schools or faculties.

For example, 1) Northumbria University offers a Masters in Multi-disciplinary Design Innovation, run by the School of Design in collaboration with Newcastle Business School and the School of Computing, Engineering and Information Sciences. The degree can be awarded as an MA or an MSc depending on the focus of the final semester’s work; and 2) Kingston University offers a suite of Masters in the Design for Development in human rights, political communications and campaigning, people management, leadership and innovation taught in a multi-disciplinary approach.

c, New Courses and Centres in Development: Many other universities across the UK are Developing multi-disciplinary courses and programmes, or are embedding multi-disciplinary approaches into existing course provision.

For example, De Montfort University includes multi-disciplinary creativity and action research modules, with external organisations setting the students live briefs.

d, Setting up Research Centres: Doctoral Training Centres are able to bring multi-disciplinary teaching and research together, and encourage designers

working with other postgraduates from a range of disciplines to undertake problem based research across disciplines.

For example, High Wire at Lancaster University is a Doctoral Training Centre for students with backgrounds in computing, design and management who undertake a four year PhD programme throughout a range of subject areas that focus on understanding and applying innovation to the digital economy (NESTA, 2010).

7.1.2.5 Course Structure of Postgraduate Programmes in Design Management

This includes how the learning process is organised, including the schedule, communication modes, and types of activities. It enables students to gain understanding of the study and course content. Figure 4.8 summarises the common factors of course structures of postgraduate programmes in design management in the UK.

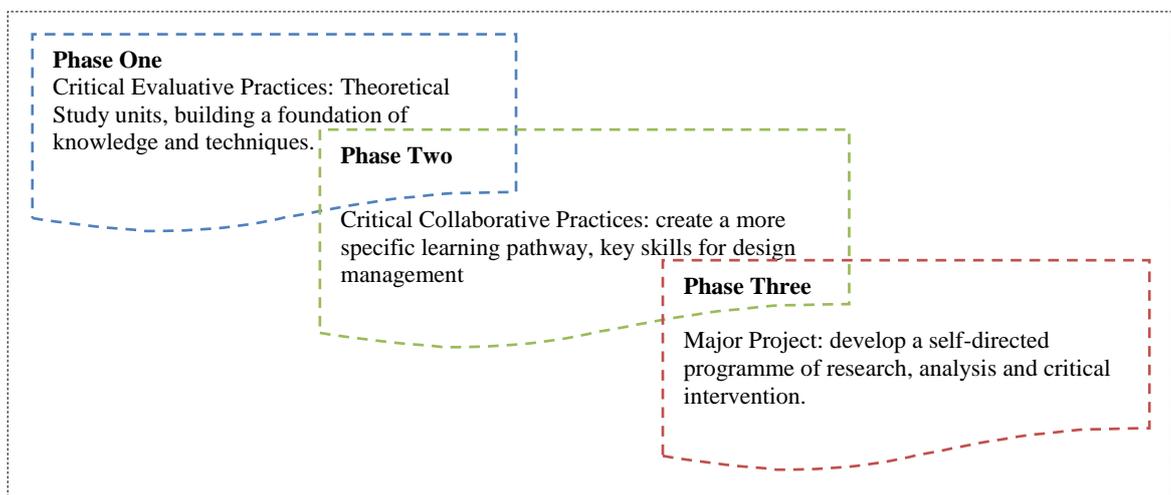


Figure 4.8 Summary of Course Structures of Postgraduate Programmes in Design Management, UK

Phase 1: Critical evaluative practices: these have normally been seen as theoretical study units, which build a foundation of knowledge and techniques. This stage establishes good practice in research as a foundation for the rest of the course. Furthermore, it develops knowledge and understanding of market sectors, the design industry, organisational design policy, design management, design innovation, and the strategic role of design in business and marketing.

Phase 2: builds upon phase one with increasing emphasis on independent study. This stage focuses on the ‘hands on’ aspects of design practice, such as project management, entrepreneurship, law and finance. Moreover, it focuses on interpersonal skills and provides a specific and detailed insight into chosen aspects of design management, which is beneficial to the student and the company. In this context, students balance design management theories with the demands of practice, and companies have the chance to explore ideas and projects that might not otherwise command their attention and resources.

Phase 3: is the final part of the Pg course and is often dedicated to the dissertation, where students conduct a major piece of work in their chosen area of specialisation. Usually, the subject of the dissertation is decided by the student, with guidance from their supervisor, and can be based on any subject related to the management of design.

7.1.3 Assessment and Learning Outcomes of Postgraduate Programmes in Design Management

The documentation from the Scottish Higher Education Funding Council (SHEFC) (1997/98) lists learning outcomes as: *‘The acquisition of knowledge, the development of understanding and other general intellectual abilities, the development of conceptual, intellectual and subject-specific skills, the development of generic or transferable skills, and the development of values, of motivation or of attitudes’*(University of Aberdeen, 1997). Pan (2008) has argued that the aims and desired learning outcomes of effective teaching may

affect positive changes in the: 1) Knowledge (i.e. specific knowledge; general knowledge and across knowledge domains); 2) Abilities (i.e. Identifying / Evaluating information; Application/adaptation of knowledge; and 3) Mindset (i.e. Enjoyment of learning).

Thus, the learning outcomes of Pg DME are no longer based on exercises intended to teach students how to reproduce or improve selected objects. Instead, the curriculum must facilitate the retention of theory and concepts through the demonstration of relevance in applied settings (Goorha and Mohan, 2010); as a 'design management' student must be equipped with the intellectual tools of the 'knowledge economy'. This includes: analytical, logical and rhetorical tools; problem solving tools; and the tools of science. Ainsworth and Morley (1995) suggested that their students preferred more emphasis being placed on courses that cater for the development of specific applied skills (such as communication), as well as for interaction with industry representatives.

Appendix 1-4 summarises the learning outcomes of postgraduate programmes in design management in the UK.

In conclusion, Figure 4.9 demonstrates the skills development and learning outcomes of postgraduate programmes in design management in the UK. Overall, the goal of design management courses is to train students in design planning, design management, design implementation, control and management of design capacity. However, the implementation of current design practices needs to include a background in design disciplines (inter disciplinary) such as Graphic Design, Product Design, Fashion Design; and different multiple backgrounds (multi-disciplinary) such as Management, Engineering and Finances. This multi-disciplinary approach ultimately combines a number of personnel, including designers and other non-designers to complete the design work. The dilemma often found was most designers or design teams lack effective management skills and abilities to cope with the

current complex and volatile business environment; in the main, cross-post project managers with management qualifications have little experience in design management, thus found it very difficult to guide design decisions and the establishment of policies and strategies in design. Therefore, design management courses should have more emphasis on knowledge management and in business schools should focus on an awareness of design knowledge (Deng, 2002).

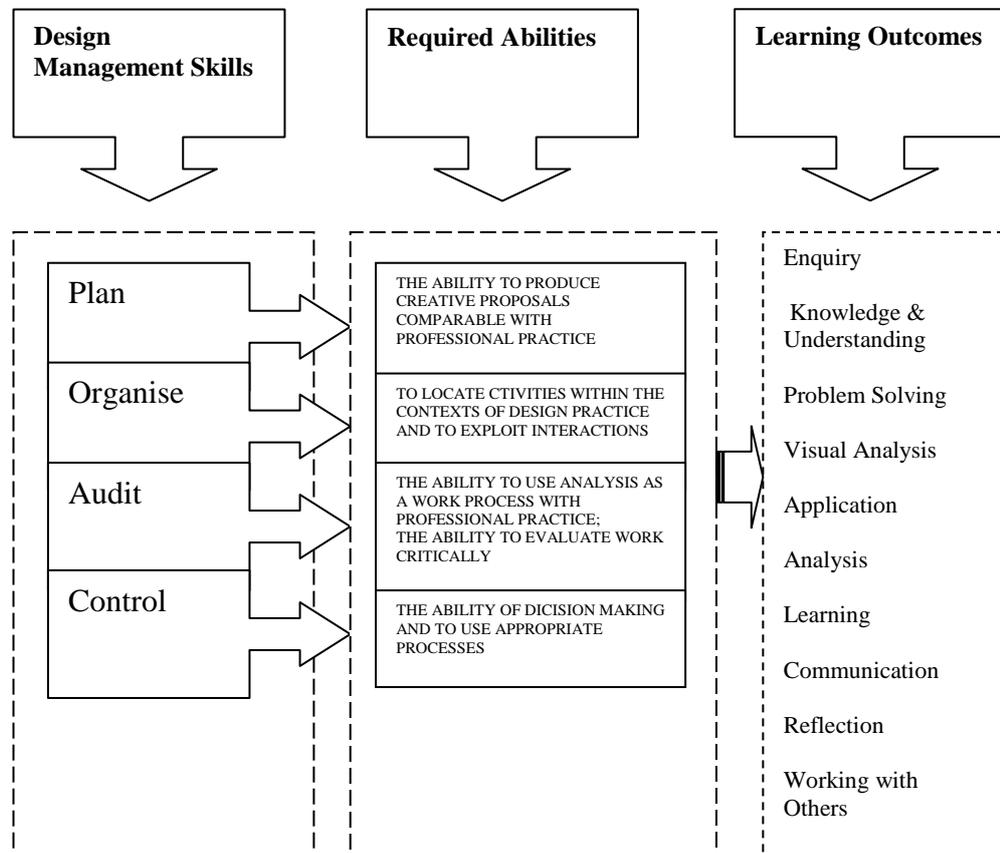


Figure 4.9 Skills Development and Learning Outcomes of Postgraduate Programmes in Design Management, UK

Part of the source based on Cao and Wang (2009)

7.1.4 Teaching and Learning Methods of Postgraduate Programmes in Design Management

Bourner and Flowers (2005) examined the future of teaching and learning methods (TLM) in HE. Table 4.3 illustrates that different teaching methods are appropriate to different learning aims.

	Disseminate knowledge	Develop capability to <i>use</i> ideas and information	Develop the student's ability to <i>test</i> ideas and evidence	Develop the student's ability to <i>generate</i> ideas and evidence	Facilitate the <i>personal development</i> of students	Develop the capacity of students to <i>plan and manage</i> their own learning
Ten common teaching methods	<ol style="list-style-type: none"> 1. Lectures 2. Up-to-date textbooks 3. Reading 4. Handouts 5. 'Guest' lectures 6. Use of exercises that require students to find up-to-date knowledge 7. Develop skills in using library and other learning resources. 8. Directed private study. 9. Open learning materials. 10. Use of the Internet 	<ol style="list-style-type: none"> 1. Case studies 2. Practicals 3. Work experience 4. Projects 5. Demonstrations 6. Group working 7. Simulations (eg computer based) 8. Workshops 9. Discussion and debate 10. Essay writing 	<ol style="list-style-type: none"> 1. Seminars and tutorials 2. Supervision 3. Presentations 4. Essays 5. Feedback on written work 6. Literature reviewing 7. Exam papers 8. Open learning 9. Peer assessment 10. Self-assessment 	<ol style="list-style-type: none"> 1. Research projects 2. Workshops on techniques of creative problem solving 3. Group working 4. Action learning 5. Lateral thinking 6. Brainstorming 7. Mind-mapping 8. Creative visualisation 9. Coaching 10. Problem solving 	<ol style="list-style-type: none"> 1. Feedback 2. Experiential learning 3. Learning contracts 4. Action learning 5. Learning logs 6. Role play 7. Structured experiences in groups 8. Reflective documents 9. Self-assessment 10. Profiling 	<ol style="list-style-type: none"> 1. Learning contracts 2. Projects 3. Action learning 4. Workshops 5. Mentors 6. Reflective logs and diaries 7. Independent study 8. Work placement 9. Portfolio development 10. Dissertations

Table 4.3 Teaching and Learning Methods for Different Learning Aims
Bourner and Flowers (2001)

Based on the clarification of relative methods of delivery of information on teaching and learning methods, Appendix 1-5 summarises the teaching methods of postgraduate programmes in design management in the UK.

Traditional teaching methods such as critique and discussion, case study and analysis have long been applied in design management study. However, the Open University and CNAAB believe that, although there remains a place for

such approaches, they provide a limited way of synthesising experience and the practical application of more in-depth responses. Over the years therefore, there has been somewhat of a sea-change in DME towards a more “problem and skills based learning” approach (Formosa and Kroeter, 2002). Such an approach is typically delivered through supplementary courses or workshops, addressing topics such as teamwork, leadership, oral communication, technology and career development. The discussion is often based on students’ research and reports, which lead the discussion and guide the other students. Role playing, cross project and design audit are further examples of skills based learning which now predominate current thinking. These will be explored at greater length below.

a, Case Study

The case study has become an increasingly favoured method of teaching design management both in design and business schools. It has been developed in the past and studied as ‘constructed case’ based on the type of case which is written by a case writer like Harvard’s teaching method, or ‘constructive cases’ which are written by students themselves. Both give students the opportunity to think about what steps a company/product/service ought to take in order to reach certain specified goals. Yin (2003) suggested certain important issues that must be considered in order to make each type of case study a beneficial experience for students. By giving students specific guidelines and being supportive enough to guide students to complete the task through their own knowledge. It could further lead students to analyse and reflect on their own learning and professional development. However, it must be remembered that if case studies cannot be experienced ‘live’, it is essential that they are made as ‘real’ as possible.

b, The Role of Simulation

The role of simulation now appears to have been adopted by most schools as a bone-fide teaching approach. Bruce and Cooper (1997) define it as new product development role-playing, in which students explore their own product design, marketing, production, planning and financial subjects in a context of personnel organisation. In this manner, students are able to examine different roles and perspectives from a variety of corporate levels. This also involves research into how multi-disciplinary teams function, and the ways in which multi-disciplinary approaches are taught and learned.

c, Cross-project Portfolio Work

Cross-project portfolio work encourages management students and design students to design projects (for example, new product development), through the evaluation of cooperation and support between both sides. This facilitates the actual experience of cooperation, work assignments and design activities for practice. Management students are responsible for preparing, submitting, and delivering design to design students, as well as managing design projects, the implementation of the design discussions for final design decision-making and the eventual evaluation of results. Design students, on the other hand, are responsible for the design process and the evaluation of the implementation of the project. Through this cross pollination of ideas from design and management students from different backgrounds, the guidance in the project allows for the implementation of the management and design of a 'Joint Steering way'.

Course reviews of UK universities suggest that most appear to engage with this teaching method, such as Design Management study at Salford University, based in the School of Art & Design, and run in conjunction with the University's School of Management and Birmingham City University. It states

that design management study is to attract both designers and non-designers and aims to enhance career prospects by gaining knowledge and skills in design management. Moreover, academics at Northumbria University are researching pedagogical approaches to teaching multi-disciplinary teams.

d, Design Audit

Design Audit has been defined as a “*systematic evaluation of the result of an activity to establish the extent to which the original objectives have been fulfilled*” (BS7000-10, 2008:16). Design audit in the current market, analyses the internal and external elements of an existing select project for decomposition, to define its design judgment rule and characteristics.

e, Engagement with Business and Employers

Traditional MA studio-based design programmes do not generally offer live or collaborative projects. However, there are quite a few universities offering collaborative industry projects on a regular basis. Working with business is also at the heart of a number of universities’ business engagement and knowledge transfer programmes, whether this takes the form of services for business or live projects set by industry and worked on by postgraduate students.

For example, postgraduate programmes at Northumbria University. The majority of Northumbria University’s MA/MSc courses in Multi-disciplinary Design Innovation undertake live projects with industry clients. Students are given opportunities of identifying tangible commercial opportunities for SMEs from the North East region, as well as demonstrating approaches to innovation in collaboration with international organisations and public sector bodies. Recent projects have involved students developing products and services to

briefs set by Unilever, the BBC, Barnados, the MS Society and the Traffic Penalty Tribunal at the Department of Transport (Design Council, 2010a).

Furthermore, 'Design London' was appointed by the London Development Agency as the delivery partner for the Design Council's business growth programme, 'Designing Demand', and working in partnership with Grant Thornton. It has delivered a range of executive education courses and business support programmes to 350 participants from 250 of London's small and medium sized enterprises (Design Council, 2010a).

7.2 Summary of Existing Pg DME Courses in the UK: The Design Management Curriculum Staircase

To conclude, curriculum in existing Pg DME courses in the UK is influenced by a myriad of concepts. In practice, even two equally sized universities operating in the same course will often adopt different approaches (e.g. with different student groups). One important challenge therefore, is to bring the main aspects of design management curriculum elements together in a coherent model.

In order to be able to evaluate Pg DME courses in the UK, based on the study consulted, a clear conceptual model and framework has been developed for this study: the 'Postgraduate Design Management Curriculum Staircase' (see Figure 4.10). The Staircase uses an approach that is similar to the one Design Management Europe used in the development of its design management ladder (Kootstra, 2009). Like the design management ladder, the staircase is a four tier model, but a key difference lies in the fact that in terms of design management curriculum study, the four tiers in the Pg DMC staircase are defined on the basis of five factors, which offers an evaluation of each stair.

The staircase form of the model suggests that the higher up the stairs, the greater the importance within the pedagogy strategy. The significance of the latter is highlighted by different studies that show that Pg DME must include a significant course of study in interpersonal skills and human dynamics and a general creative education with a focus on advanced design principles.

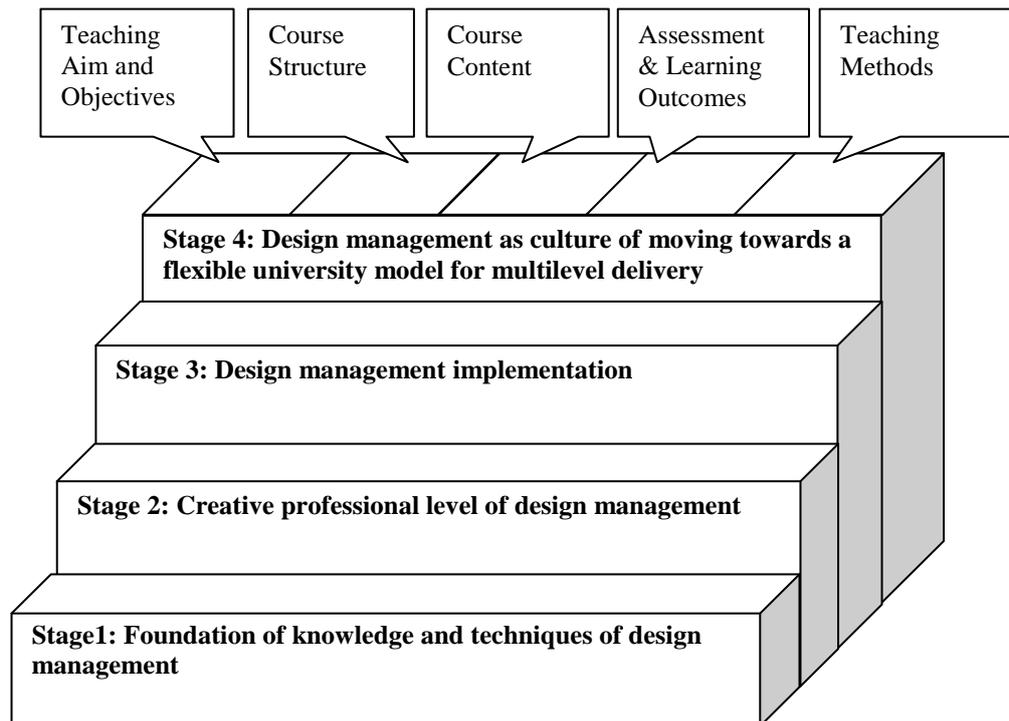


Figure 4.10 The Postgraduate Design Management Curriculum Staircase

To obtain a clearer idea of what the four stages of Pg DME curriculum entail, the study identified five factors based on the extensive desk search. These criteria appear to bear upon the success and failure of design management postgraduate courses. Each criterion is represented in each of the four Pg DME stages, as becomes apparent in the matrix (Figure 4. 10). The following gives brief explanations of each factor.

A factor driving change in UK Pg DME is the curriculum. The essential elements reflect a wider and deeper understanding of the different kinds of

knowledge that are needed by the designer or managers in the new circumstances of our time. The following describes the four stages using a number of general characteristics:

a, Stage 1: Foundation of Knowledge and Techniques of Design Management

Stage One is called “general education,” in the tradition of western liberal education. The subjects may include literature, the natural sciences, and the social sciences, as well as mathematics or technical subjects in engineering and computer science (e.g. the first semester MA/Msc Design Management study at De Montfort University). The point is that students must have a breadth of learning if they are to work effectively in contemporary culture. It builds a foundation of knowledge and techniques. As such, undergoing this stage enables students to:

- Develop a range of conceptual and practical research skills;
- Explore a range of relevant contemporary theoretical contexts;
- Complement research methodology by undergoing an introduction to professional practice and the nature of the design process;
- Understand consumer needs, buying drivers and design strategy;
- Be able to develop an appreciation of the discipline and its role within a broader high technological industrial context;
- Critically appraise current design and management technology.

b, Stage 2: Creative Professional Level of Design Management

One element is called ‘foundation studies’. This includes design history, theory, and criticism, as well as the aspects of business and economics that have a bearing on design today. As the field is mature enough in the UK, education can include serious reflection on the past and the future. For instance, this stage

enables students to:

- Build an understanding of advanced scholarship in design, and an individual, creative response to design development work;
- Realise the core aspect of design thinking as a driver of innovation, within marketing strategy and as a management practice;
- Enhance business planning skills and knowledge to identify potential for a business resource to bring the idea to market;
- Improve creative and management processes and production techniques in a business context.

c, Stage 3: Design Management Implementation

The third stage is known as “concepts and methods of design practice”. Kefallonitis (2007:23) believes that the true description of education in design management is to teach students to ‘*oversee the entire process of an offering’s development*’. This involves that ‘*acquiring skills that would allow one to direct tasks ranging from marketing communications to actual design work*’. In many design management programmes, such as the MA Design and Branding Strategy and MA Design, Strategy and Innovation study at Brunel University, this phase of study involves a specialist project under academic supervision engaging closely with industry and / or the design profession. As the name suggests, this includes instruction in the many new methods and techniques that are now part of design practice. Human factors, cultural factors, and user research are some of the subjects taught in this element. The concepts and methods are taught individually, with an understanding that they will be integrated in the design studio as the student develops.

d, Stage 4: Design Management as Culture of Moving Towards a Flexible University Model for Multilevel Deliver

The notion of flexible delivery is not new (Lundin, 1997). In the late 1990s, flexible delivery was defined as *'the provision of learning and assessment opportunities in modes which serve to increase the degree of student control over when, where, how and at what pace they learn'* (Chalmers, 1997:1). In terms of Pg DME in the UK, flexibility takes on new dimensions. The driver for this phenomenon is the emergence of the market for those providers of DME that are prepared to embrace greater flexibility. However, it is not just the flexibility in the mode of course delivery that is important, but the flexibility in the learning design of the course itself. Most significant, is that learning outcomes must be in alignment with corporate objectives rather than the professional judgement of academics.

7.3 Chapter Summary

In this chapter (Chapter 7), a model of the core curriculum for managing design in existing postgraduate courses in the UK has been discussed to establish the content which Pg DME degree courses currently deliver and skills developed, and a model of the core curriculum described, to identify sensitive areas in knowledge transfer.

In terms of postgraduate design management study in the UK, the expectations of society, government and industry require novel approaches that combine different disciplinary views; knowledge bases and, even more importantly; provide students with practical experience in working as part of multidisciplinary teams in real-life contexts.

In the next chapter (Chapter 8), it will develop content analysis of existing postgraduate courses in China. It will develop a model of core curriculum for managing design in existing postgraduate courses in China; also establish the content which Pg DME degree courses currently deliver and skills developed.

Chapter 8:

Content Analysis of Existing Pg DME Courses in China

This is the 2nd of three chapters presenting the research findings from the 2nd phase of the comparative research study.

This chapter will set out to critically investigate current design management core curricula in Chinese HEIs through secondary sourced material in order to identify culturally sensitive areas for further investigation. Thus it will develop a model of core curriculum for managing design in existing postgraduate courses in China, establish the context which Pg DME degree courses currently deliver and skills developed, and set up a model of a core curriculum, to identify culturally sensitive areas.

The aims of this chapter are to:

- Identify the current models of Pg DME in China through secondary sourced material.
- Develop a current model of core curriculum content in existing Pg DME courses in China.
- Provide central information on the existing Pg DME of China.

Figure 4.1 outlines Chapter 8.

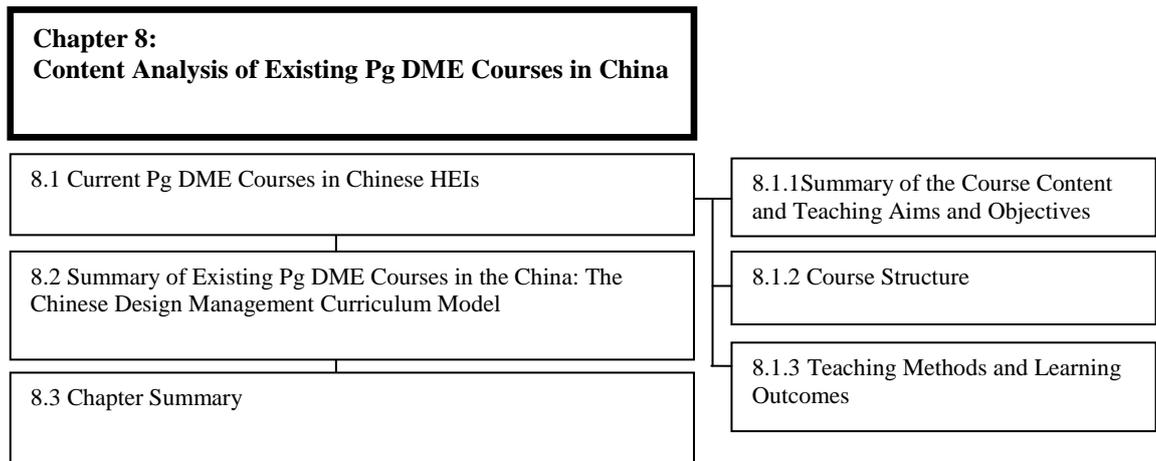


Figure 4.11 Chapter Map: Content Analysis in Existing Postgraduate Design Management Education (Pg DME) Courses in China

8.1 Current Pg DME Courses in Chinese HEIs

The second set of data included the documents of current models of Pg DME sources both in the UK and China (CN $n=7$, see Table 4.4), including the handbooks, and course descriptions.

The following part of this chapter provides a discussion of current Chinese models of Pg DME through secondary sourced material. This research targeted all Chinese universities that have Pg DME programmes and aims to both investigate current design management core curricula in HEIs and identify culturally sensitive areas for further investigation. See Table 4.4 make up the participating institutions and programmes in China.

University	Course Title
Central Academy of Fine Arts, Beijing	Postgraduate study in Design Management
Tsinghua University, Shanghai	Postgraduate study in Design Management and Innovation
Tongji University, Shanghai	A: Design Management study for Designers B: Design Management study for Senior Managers
Tongji University - Milan Polytechnic University	MDM in Design Management (environmental design and architect design)
Shandong University of Art and Design	MA design Management
Shanghai Jiaotong University	A: MA in Art and Design study (Art Management) B: Design Management study in Industry Design C:International PG cert. associate with USA university (MA 1+1)
Renmin University of China	Postgraduate study in Media Art and Design Management

Table 4.4 Summary of the Participating Institutions and Programmes in China

8.1.1 Course Content and Teaching Aim and Objectives of Postgraduate Programmes in Design Management

Since the first introduction of design management in China in 2002, design institutions and universities have begun to realise the strategic value of DMED and started to formulate related courses at postgraduate level (see 1.1.1.2). However, significant differences in teaching content and methodology have been identified in the review; due largely to reasons such as faculty make-up and varying degrees of knowledge and background of academic staff. Consequently, one of the primary questions of this research concerns current course content in Pg DME programmes in China.

In general, the government demands that all Chinese universities, who offer degree courses, have their specialised subjects' contents guidelines approved by the Ministry of HE. However, at present, universities running design management programmes, particularly at postgraduate level, are not subject to the same constraints. As the subject does not form part of the official catalogue of postgraduate study officiated by the government, design management master's programmes are generally attached to some other speciality in the vast majority of institutions and universities. For instance, in Shanghai Jiaotong University, the MA design management programme is titled 'Art and Design Study (Art Management)' and in Shandong University of Art and Design, the MA Design Management falls under the umbrella term of 'Art and Design Study (Design Management)'.

Other study models have also been employed in order to avoid the strict regulations laid down by the Ministry. These often take the form of a short-course training model in design management and include Design Management Study for Senior Managers in Tongji University and Design Management Diploma Course Study, for example postgraduate study in Media Art and Design Management, in Renmin University of China. Liu and Zhan (2008:19) suggest that: *"In the early stages of design management education in China, some universities and institutions may simply employ short-course training model to reach their short-term develop goals, given the inherent problems in authorising or validating degree awards, and concerns about programme length, teaching and learning models, and shortage of staffs and faculties capabilities of delivering, despite strong market demand, and corporate interest in design management."*

As such, Appendix 1-6 provides an overview of course aims and objectives and Appendix 1-7 summarises course content in Pg DME courses in China.

In summary, most individual Pg DME curricula are often affected by teaching resources, teaching materials and teaching methods. From the review of current related courses running in China, content in Pg DME courses can be summarised into five subjects, as indicated by Liu's framework in his book: 'Design Management' (Liu.H.S, 2007). They are: Theoretical Concept of Design Management; Design Strategy; Design Project Management; Human Resources Management and Design Policy. However, after combining and integrating others, in particular 'Design Management' written by Liu.G.Y (2006), Design Management knowledge content is divided into Design and Design Management; Fundamental Concept of Design Management; Innovation and Creativity; Design Management and Corporation Strategy; Design Project Management; Design Management Consultancy and Design Communication. In addition, 'Design Management: organisation, communication and implantation of product design' (Deng, 2001), which focus on Design Process; Design Process Control and Design Audit. Furthermore, the course content can also be divided into three phases, which are Theoretical Study of Design Management; Design Management Practice and Design and Management Policy study. Hence, Course Content can be summarised as the table below suggests (Figure 4. 12):

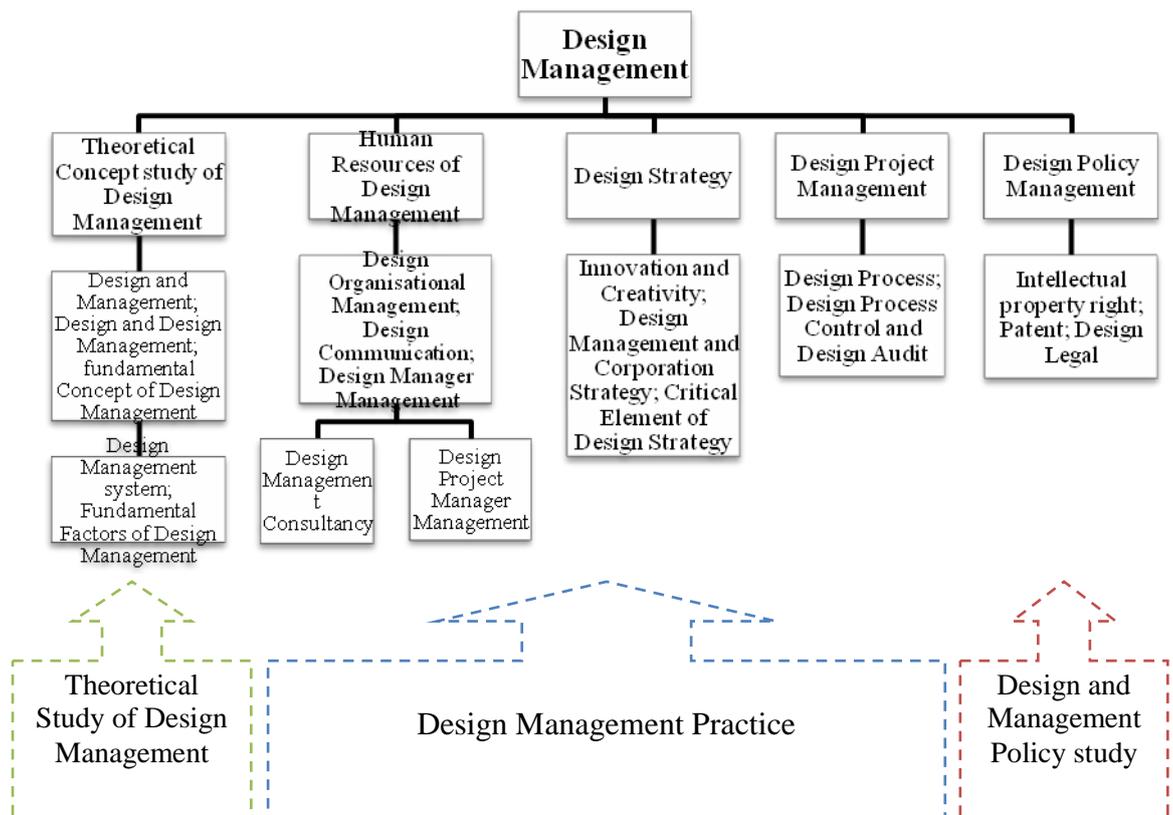


Figure 4.12 Course Content of Postgraduate Programmes in Design Management, China

Based on Cao and Wang (2009)

Looking from the different perspectives of many HEIs in China, according to course objectives and requirements, and the relationship between design and management, design management postgraduate study course content in China can also be divided into four segments; highlighting essential similarities with design management postgraduate study teaching content in the UK (see Figure 4.6). The four segments alluded to are: 1) Design subject related modules; 2) Management subject related modules; 3) Design management subject modules; and 4) others. The four categories generally cover the curriculum content of each institution in China but, observations have been made that suggest the challenge is to design specific course content within the curriculum as well as balance the proportion between different modules.

8.1.2 Course Structure of Postgraduate Programmes in Design Management

In terms of course construction, according to the teaching conditions discovered in various design schools in China, there are design management master degree studies and postgraduate certificate studies. Overall, the enrolment in postgraduate level design management courses in China can be described on two different levels of object-oriented setting.

- The first setting provides for design school BA graduates who are willing to embark on further study development. Most students are assumed to have a basic knowledge of design and practical experience of design in market demand, and a certain understanding of the design process. The courses are mostly designed to enhance the vision and interests of students to achieve the relevant design development on strategy, management, innovation, and branding. For instance, the MA design Management study at Shandong University of Art and Design is one of the few courses in China to provide master degree programmes in design management and enable design students to understand the complexity of design strategies and enhance the value of an enterprise's operations.
- The second setting is for professional development to meet the demands from management level of both public and private sectors in China. This type of study often focuses on the needs of enterprise and innovation, to update and expand the business scope of qualified personnel structure of knowledge, and to enhance market competition and R & D service levels. For example, postgraduate programmes in Design Management at the Central Academy of Art; as well as postgraduate certificate study in Design

Management and Innovation at Tsinghua University. Both courses focus on the development of students' professional knowledge and market-oriented operation skills in business. They also place great value on the improvement of design quality and comprehensive project value, as suggested above, in public and private sectors.

Appendix 1-8 outlines the course structure in Pg DME courses in China.

From the summary it can be suggested that different universities have their own strategic approaches to determining course content, which are based on a core knowledge framework and the needs of personnel training. The MA in Art and Design (Art Management) study at Shanghai Jiaotong University, for example, has aimed to equip students with new product development processes and control capabilities, and abilities to forecast design trends, which emphasise the use of the efficient operation of product design and organisational strategy at design level in a corporation and business perspective. Design management study for designers at Tongji University focuses on design innovation and strategy which targets design management study at a tactical level. Whereas, a further course of study, named design management study for senior managers, places emphasis firmly on design leadership and represents its design management study at a more strategic level (see Figure 4. 13).

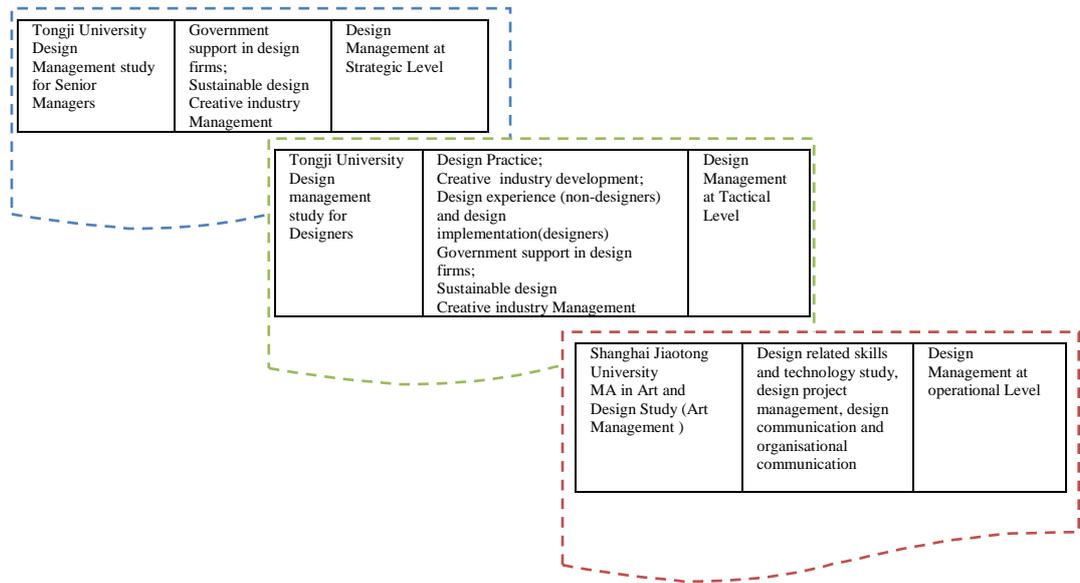


Figure 4.13 Strategic Approaches for Determining Course Content

Nevertheless, from different perspectives, models of postgraduate programmes in design management in China can also be described in three ways, namely as: 1) Discrete or Part of a framework; 2) Specialist or Multi-disciplinary; and 3) Structured or Self-directed (see Table 4.5 for a taxonomy of the different models of post graduate programmes observed in this review):

Programmes	Discrete or Part of a Framework	Specialist or Multi-disciplinary	Structured or Self-directed
Central Academy of Art PG study in Design Management	Discrete	Specialist	Structured
Tsinghua University PG study in Design Management and Innovation	Part of a framework	Multidisciplinary	Self-directed
Tongji University Design Management study for Desingers Design Management study for Senior Managers	Part of a framework	Multidisciplinary	Structured
Tongji University - Milan Polytechnic University MDM in Design Management (Environmental Design and architect design)	Part of a framework	Multidisciplinary	Structured
Shandong University of Art and Design MA Design Management	Discrete	Specialist	Structured
Shanghai Jiaotong University MA in Art and Design Study (Art Management)	Part of a framework	Specialist	Structured
Renmin University of China PG study in Media Art and Design Management	Part of a framework	Specialist	Structured

Table 4.5 Taxonomy of the Design Management Postgraduate Programmes Discovered during the Review (based on Yee, 2010)

(Programmes considered to be part of a framework have at least one shared module with other programmes. Structured programmes have at least 30% taught element)

8.1.2.1 Discrete or Part of a Framework

Discrete programmes do not share units of teaching with other programmes. The benefit of this structure, on the one hand, is that it can be attached to a matrix institution and be taught with relatively flexible resources and facilities. It can also remain relatively independent. A prime example of such an approach was established by the Central Academy of Arts and Design, and Management Centres have since been opened in Shanghai Jiaotong University and Tsinghua University, Beijing espousing discrete programmes.

The general trend is towards finding economies of scale through the sharing of modules, for example research methods. However, discussions surrounding new, discrete programme development points towards the adoption of a framework model where at least some unit of teaching is shared. For example, Shandong University of Art and Design evaluates the transferability of

modules across different programmes in order to avoid duplication and to draw closer links between disciplines. The study of design management was established in the school of art and humanities, along with other adjacent subjects such as art design study, fine arts and cultural heritage study, with a view to stimulating the development of traditional subjects form a symbiotic fusion of teaching ecology. A further example can also be seen in design management study both for designers and managers at Shanghai Tongji University in which some of the units of study are shared.

There remains a further form which has been observed throughout the research and this places design management professional teaching within universities and other educational establishments in departments of foundational knowledge education. This is particularly with a view to bringing the teachers (from literature, law and business, for example) to a gradual transition, which enables them to get involved in art related professional teaching. The advantage of this approach is to format a professional teaching scale in a relatively short period of time. However, as a result of its flexibility, it is infinitely more difficult to ensure a standard, quality approach to both teaching content and learning outcomes.

8.1.2.2 Specialist or Multi-disciplinary

Traditionally, postgraduate programmes in design are located within specialist, skills related domains, in which Domain specific programmes in the traditional subjects (such as Graphic Design, Product Design, and Fashion Design) are taught. There has however been a range of multi-disciplinary programmes developed in response to the MLP and enhancement of design to meet the economic, government and industry needs (see 2.3.2 and 6.2.2). For example, Pg study in Design Management and Innovation at Tsinghua University and MDM in Design management (Environmental Design and architect design) between Tongji University and Milan Polytechnic University.

Both programmes focus on multi-disciplinary and collaborative aspects of design, mixing different domains of design and non-design students in live projects.

8.1.2.3 Structured or Self-directed

Historically, design related postgraduate programmes in China were based on models of studio practice, relying on a personal approach with tutor input (such as Graphic Design, Product Design and Fashion Design). In comparison, the structured approach refers to more formal taught modes of delivery, either through lectures or seminars. These two modes have been described by differentiating them as either ‘expanding knowledge’ or ‘enabling experimentation’ (Yee, 2010). However, they are not mutually exclusive, each programme will often emphasise one model over another.

The self-directed model approach equips students with explicit tools to improve their skill-set and practice. It is probably more analogous to a specific approach, where students are expected to arrive with a particular project in mind. Each mode will attract different profiles of students, with different abilities and experiences. The self-directed mode generally attracts mature students who prefer space and support for experimentation. For example, postgraduate study in Design Management at Tsinghua University is based on a part time, structured approach, which gathers students for a 10 day thought programme for every 90 days of study; with a combination of a suitably expert and experienced team both in the design and management fields from universities and industries.

The taught mode approach is based on providing an environment that is conducive to experimentation and self-expression. It is more attractive to BA graduates as it provides an explicit structure to make the leap to postgraduate

education. This preference has been observed in several of the postgraduate programmes, such as MA Design Management in Shandong University of Art and Design, where the students were largely recruited from the BA graduates from art and design subjects.

There is a move towards grounding practice-based programmes with theoretical and research content. All the programmes, regardless of model, have either a research module or deliver research methods content. The challenge for practice-based programmes, as one participant puts it: *'is to embed research methods in the practice while understanding the commonality and differences between art and design research methods'*. The challenge, as another participant puts it, is to deliver relevant research methods content across different subjects that could fall into Design, Craft or Fine Art practices.

8.1.3 Teaching Methods and Learning Outcomes of Postgraduate Programmes in Design Management

Teaching and learning methods include the relative effectiveness of different methods of delivery of information. Appendix 1-9 summarises learning outcomes and teaching methods in Pg DME courses in China.

8.1.3.1 Learning Outcomes

The Learning outcomes from the reviewed schools in China suggest that very few universities have been given a complete picture of what the 'learning outcome' should entail. Some present a general idea of the acquisition of design management knowledge (such as Tsinghua); some discuss the development of understanding and other general intellectual abilities (such as Shanghai Tongji); and some mention the development of conceptual, intellectual and subject-specific skills, the development of generic or transferable skills (such as Shanghai Jiaotong). In conclusion, the learning

outcomes of postgraduate design management learning in China are determined by the skills that design managers need. However, it requires a detailed and specific attention on ‘how’ to equip design management students with the intellectual tools of the ‘knowledge economy’. This includes: analytical, logical and rhetorical tools; problem solving tools; and the tools of science.

8.1.3.2 Issues related to the Teaching Methods

a, Design Management Practice

Through the investigation of Pg DME courses in china, both the tutors and the very nature of the classrooms they teach, play extremely important roles in design management study. However, entrepreneurs, design directors and managers, and consulting and planning management experts are also involved in successful DME. Various teaching methods are employed, such as through the examination of real life business operations and case studies and products and services development analysis and teaching field trips.

Teaching collaboration through enterprise project models largely relies on innovative enterprises, in order to train all levels of design excellence, design innovation and management talent. By establishing the accumulation of intellectual resources, it directly embraces outstanding graduates in the business. The training objectives account for the different needs of different businesses, including R& D, management and planning talents, across the design of management-related courses to students from different knowledge backgrounds and abilities to meet different types of enterprise needs. For instance, design management study, as a module in MA industrial design, at the Media and Design Institute of Shanghai Jiaotong University, allows students, in a study period, to have the opportunity to undertake an internship in design consultancies. The subject may be related to industrial design,

architectural design, interior design and landscape design, also in creative industries such as film, television, animation and game design. Companies which specifically participate and work with the course of study include: American IDEO Shanghai Subsidiary Company, CC&E design (Shanghai and Guangzhou), Haier GK Shanghai design centre, BUKE-Asian automobile technology centre, Intel Shanghai Subsidiary Company, as well as American EA Corporation Shanghai Subsidiary Company (game manufactures).

A further trend has been observed which is to develop overseas partnerships. For example, Design Management in Industry Design at Shanghai Jiaotong University also offers an international postgraduate certificate in association with a US university which aims to train high-level design talent, to acquire new product development processes and control capabilities, and hone abilities to forecast design trends. MDM in Design Management (Environmental Design and Architect Design) enjoys collaboration between Tongji University and Milan Polytechnic University, Italy, and provides a new pathway to postgraduate study, while embracing the latest trends and resources of design management internationally.

Therefore, by setting up programmes together, universities have the opportunities, on the one hand, to import selected design management related texts and teaching materials from EU and the US; and also, arrange for students to participate actively in the design management projects, co-operation with overseas schools to conduct market research on specific items of work and training. The emphasis of design management study, often including design innovation management, design communication and design project management and other related courses, will be combined with the promotion of working with students at an international level; i.e., across national culture and boundaries. Undertaking specific projects related to enterprise operations and practical exercises, also aims to avoid the shortcomings of design management teaching purely in a classroom context.

b, Teaching Recourses

Traditionally, postgraduate programmes in design are located within specialist, skills-related domains. Domain-specific programmes in traditional subjects (like Graphic Design, Product Design and Fashion Design) are still flourishing (see 8.1.2.2). There has, however, been a range of multi-disciplinary programmes developed in response to the government policy of improving the innovative industry (see 6.6). These focus on multi-disciplinary and collaborative aspects of design disciplines and geographical constraints which prevented a continuation of the course being taught by international expertise from both business management and design. For example, the MA design management study in the Central Academy of Fine Arts in Beijing, led by Professor Wang.M and, Professor Xu. P, invited domestic and international professors / experts to teach on the programme and encourage them to take up honorary professorships. As a result, this specialised construction facilitated rapid development over the past several years in CAFA. Design management specialised lecturers from CAFA mostly have research experience in design related discipline domains, and have mostly participated in design to business activities for a long period of time; at the same time, most come from a background of studying abroad.

Another procedure is to invite experts who have teaching and practical work experience in the design management domain to accept the post of discipline leader, and recruit outstanding graduates, through well-known institutions and universities. For example, the design management study at Tongji University has brought together a wealth of experience in teaching and research, with domestically and internationally well-known professors; business executives; and high-level designers in teaching teams such as Shanghai World Expo, chief of Park planning Wu. ZQ; Shanghai Expo Exhibition Design Deputy Minister Wu. G. X; Shanghai World Expo park planning team, Landscape Lighting

Leader Hao. L X., and CUMULUS founder and former chairman, Finnish Helsinki Art and Design University former President Yrjo Sotamaa.

8.2 Summary of Existing Pg DME Courses in China: The Chinese Design Management Curriculum Model

From the review it can be seen that China's economic development model has been driven by various western societies' social & cultural conditions and constantly sought to improve the actual design and management of its education system so that the race for economic and social development remains consistent with their design education to meet the knowledge needs of infrastructure and personnel training.

To conclude, there is no widely accepted form of Pg DME, as coherent as other fields of professional education, due to the diverse and fragmented interpretations and meanings of managing design which makes it extremely difficult to define. In the assessment and evaluation of Pg DME courses in China, this study therefore proposes a perspective to encapsulate the directions and various emphases of Pg DME in China into a coherent form, as shown in Figure 4.14:

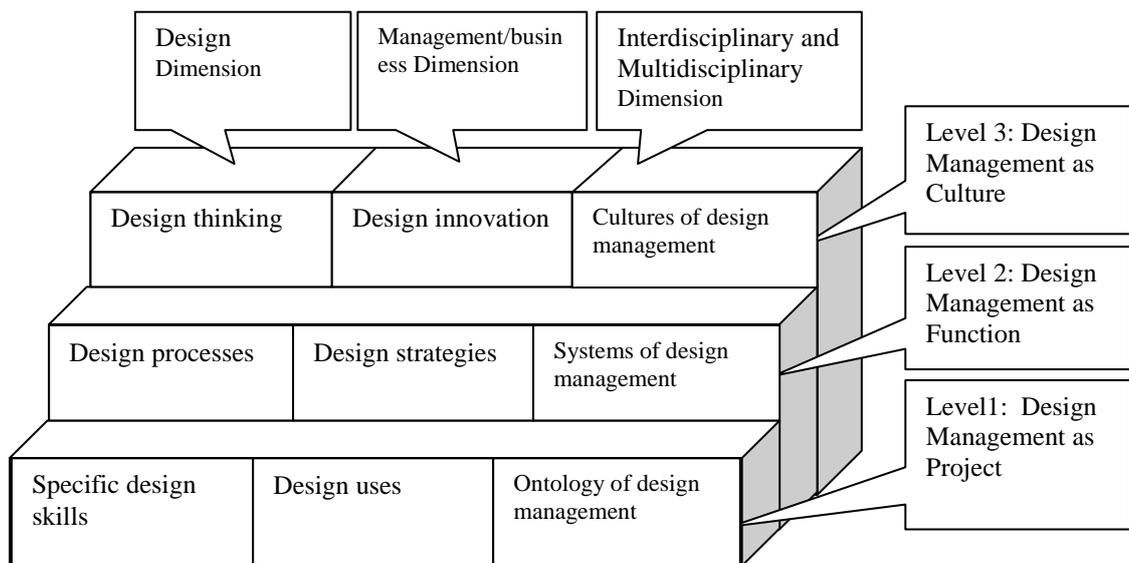


Figure 4.14 An Overview of Postgraduate Design Management Curriculum Model in China

Based on the review of Chinese Pg DME courses, a conceptual framework has been developed for this study. The issues reflect on existing Pg DME courses in China and emphasise the following subject categories:

a, Level 1: Design Management as Project. Design management is understood as designed artefacts and management requirements in light of human-made worlds.

This approach to Pg DME in China suggests that teaching modules place emphasis on use of design to meet direct business needs. At this level, design is limited to specific design artefacts based on such things as: product design, product line extensions, or product improvement projects. Thus, design is largely associated as a significant tool for product/service design and development. At this level of design management study, design is primarily used as a marketing tool, with a view to adding value to the existing product/service offering through appearance, styling, packaging, marketing

communication and visual identity. However, design has not always been concerned with creating added value through the whole process, but merely used as a finishing touch at the end of the project process. As a result, at this level, design has not been integrated into other management/business processes. At this level, design management study is limited to the designed artefacts and management requirements in light of human-made worlds.

b, Level 2: Design Management as Function. Design management focuses on *‘the planning of business strategies and systems at firm or organisation level in light of economic development’* (Yee and MacLarty, 2010).

At this level, teaching modules place emphasis on design management as management of design function. In this division the design role has been defined and integrated with other processes in development and design and efforts have shifted from focus on the product to a broader approach that includes the process (Heany, 1983 in: Von Stamm, 2003). Furthermore, innovation and the development of products and services demand the mobilisation of several disciplines and specialities, and require synthesising an array of different factors. Such an approach invests the ‘design manager’ role with formal responsibility for the management of the total design process. Students will act as an interface between different kinds of design specialists, departments and company management. At this level, design is used proactively, and product process quality is an important factor to ensure successful task completion.

c, Level 3: Design Management as Culture. This is concerned with design issues *'in light of philosophical inquiry into managing design'* (Buchanan 2004; Holland et. al, 2007).

At this level of study, strategic management of design and design leadership are infused and design innovations refer to non-technological innovations. Design innovation can come in the form of new products or services, an innovating communication, or innovating marketing tactics (Gemser and Leenders 2001, Verganti 2006). As a young discipline newly developed in China, design management needs to realise a move from an emphasis on managing a design task towards a focus on leadership. As McBride (2007:21) suggested, the design management subject's future can be *'best viewed not as recourse, but rather as source of strategic advantage'* and most importantly, *'innovation is the bridge from cost to strategic advantage and to the future'*.

To conclude, with reference to the fragmented meanings of design management, these emphases implicate various unbalanced interpretations of DME ranging from an educational dichotomy between the specialised and generalised nature of design (Black 1983a, 1983b) to managing design as a professional discipline (Cross 2001; Szeto 2010).

By referring to the investigation from existing Pg DME courses, Pg DME in China can be summarised into three dimensions:

- **Design dimension:** Creative problem solving, synthesis of technology, design and management skills through design project making, planning and thinking;
- **Management/business dimension:** Design strategy in business planning and management to maximise design in organisations; and
- **Interdisciplinary and multidisciplinary dimension:** inquiries through philosophical thinking of the human-centred approach. This involves teaching *'design and creative problem solving alongside business and management education and/or technical and science subjects'* (HEFCE, 2010:08).

8.3 Chapter Summary

In this chapter (Chapter 8), a model of core curriculum for managing design in existing postgraduate courses in China has been developed, the content which Pg DME degree courses currently deliver established and subsequent skills developed. Based on the review of Chinese Pg DME courses, a conceptual framework has been developed for this study. The issues reflect on existing Pg DME courses in China and emphasise the various unbalanced interpretations of DME ranging from an educational dichotomy between the specialised and generalised nature of design (Black 1983a, 1983b) to managing design as a professional discipline.

In the next chapter (Chapter 9), the major findings of the core curriculum for managing design in existing postgraduate courses in both countries will be presented, as the 2nd findings of the 3-phased comparative research study. A framework will also be developed as part of the 2nd findings.

Chapter 9:
Comparative Analysis and Findings of Existing Pg DME
Courses between the UK and China
(Second Findings and Discussions)

This is the final of three chapters presenting the research findings from the 2nd phase of the comparative research study.

The previous two chapters (Chapter 7 and 8) have reviewed and studied the existing Pg DME courses, both in the UK (Chapter 7) and China (Chapter 8), respectively. This chapter will present the major findings from the 2nd phase research study of the core curriculum for managing design in existing postgraduate courses in both countries; these are comparatively discussed through the identification of three sensitive areas of knowledge transfer: 1) Cultural Impacts; 2) Industry Needs; and 3) Teaching and Learning Strategies.

The aims of this chapter are to:

- Discuss the key issues of the existing Pg DME courses both in the UK and China;
- Develop the findings of phase two of the comparative research study, as well as a framework at the tactical level of Pg DMED in China.

The discussion in this chapter will raise a number of questions stemming from overarching issues in the foregoing comparative study, which will be explored in Chapters 13 and 14. Table 5.2 Summarises these questions and signposts where they are carried out and discussed in Chapter 9.

Figure 4.15 outlines Chapter 9.

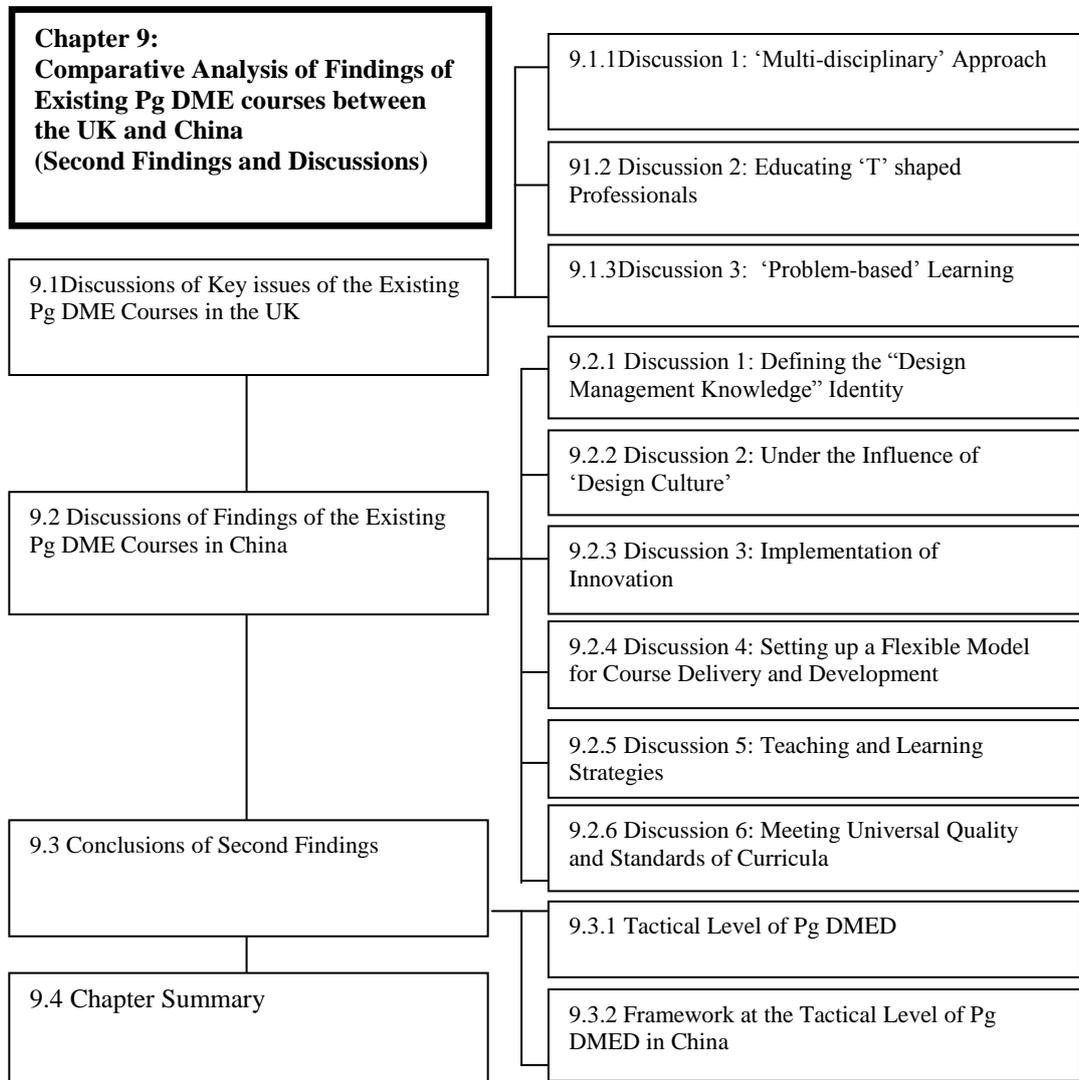


Figure 4.15 Chapter Map: Comparative Analysis of Findings of Existing Postgraduate Design Management Education (Pg DME) Courses between the UK and China

From the reviews of existing Pg DME courses in the UK and China (Chapter 7 and 8), the objectives of a DME have been given. A natural question which arose was what design management curriculum and teaching /learning processes should entail. There are a number of specific issues that deserve discussion; most of them dealing with curriculum content and revolving around the various

issues that have been levelled by observers in both the corporate and academic communities.

9.1 Discussions of Key Findings of the Existing Pg DME Courses in the UK

9.1.1 Discussion 1: ‘Multi-disciplinary’ Approach

By synthesising existing Pg DME courses in the UK, due to the increasingly complex environment in which design management operates, design management curriculum must give more consideration to whether it has the appropriate balance between the internal and external focus. As an example, for programmes that emphasise multi-disciplinary and collaborative project work, providing students with an opportunity to work with UK-based organisations is an important part of the student experience (see 7.1.3.3). Furthermore, it is important to understand the current postgraduate market. In the UK, it is a changing landscape, with student profiles altering on a yearly basis due to economic, social and political reasons. It is crucial that new programmes are developed, based on market potential, coupled with the availability of expert staff to deliver.

Therefore, there is a set of subjects that is conceptual in nature and provides students with a methodical academic perspective of how organisations function as a counterpart to the experiential knowledge they might accumulate while working. These subjects impart a conceptual framework that forms the backbone of DME. Spence (1973) argued that an important function of education is to provide a job-market signal. To the extent that the conceptual framework imparted by the design management curriculum is a significant component of the signal, it could become yet more credible with a stronger core conceptual foundation. However, from the UK experience, design management is constantly moving into new areas. As Rochacka from the Design Council has recently explored: *‘With public sector becoming increasingly interesting to design management specialist, developing courses*

on civil servants and their specific needs for design management skills is an area worth exploring' (DMI viewpoints, 2010).

Therefore, from the content analysis of existing Pg DME courses, it can be seen that the multi-disciplinary approach in social contexts and emphasis on the 'hands-on' real life experience are the cornerstones of Pg DME programmes in the UK. However, there is no one way to introduce multi-disciplinary design education into an institution in the UK. Many examples (see 7.1.2.4) demonstrate the multiple approaches of multi-disciplinary DME. These activities and initiatives are being driven and championed by the universities themselves and come in a wide range of forms, sizes and costs. As such, it is worth outlining the breadth of approaches and highlighting noteworthy examples (Design Council, 2010a).

9.1.2 Discussion 2: Educating 'T' shaped Professionals

From the review of existing Pg DME courses in the UK, it shows that postgraduate programmes must link with research and business to be seen as forward thinking and outward facing. Engaging with new thinking and collaborating with industries, it is important to *'provide placement support and opportunities (for students) to connect with local organisations and businesses'* (Yee, 2010). Therefore, integrated education models in the UK are emerging in Pg DME.

In the UK, all Pg DME courses refer to the necessary theoretical and practical knowledge needed by designers and non-designers. Where people from different backgrounds, from designers to engineers, work together, this requires a common ground to provide understanding among these groups. The function of DME is to help create a common language; as the design world is closely linked, to include design streams like industrial, product and advertising. In

order to market the needs, the requirement of a common language is imperative (Kefallonitis, 2007).

Moreover, well-functioning teams not only get along in daily activities but also create a shared body of knowledge that is more than the sum of individual members' own knowledge and skills (Karjalainen and Salimaki, 2008). This concerns creation and sharing of explicit and tacit knowledge (see 2.2), but especially 'embedded knowledge' within the teams. Madhavan and Grover (1998) define embedded knowledge as a result of the combination of team members' tacit knowledge that is potentially created as soon as they get together. This type of knowledge is inherent in well-functioning teams, collective knowledge that cannot be held efficiently by individual members. Therefore, another key finding from the UK study is that all the programmes reviewed aim to create trust between different disciplines, boosting hands-on interaction through PBL. By embedding these aspects it is ensured that students' multidisciplinary knowledge base is extended.

As a result, the model in UK Pg DME can be referred as 'T-shaped' education. As Madhavan and Grover (1998) propose, embedded knowledge that a team possesses is transferred to 'embodied knowledge' in the subsequent new product that the team develops. How successfully the embedded knowledge transfers to embodied knowledge, in other words, how well the product meets the intended goals, depends on a number of key variables (Karjalainen and Salimaki, 2008). Tim Brown, CEO of design firm IDEO, which has been a vocal proponent of the need for 'T-shaped people', describes these ideal employees as '*specialists with a passion and empathy for people and for other subject areas*' (Brown, 2007).

Many people working within the design industry use the McKinsey definition of 'T-shaped people' to describe the most effective mix of skills. '*It's important to note here that when we talk about broadening the skill sets of tomorrow's graduates we are not advocating replacing highly trained*

specialists with a cohort of generalists' (Design Council, 2010c). In 'T-shaped people', 'vertical' specialist depth, developed mainly through undergraduate qualifications, is complemented by the 'horizontal' appreciation and understanding of other disciplines and professional contexts, often developed in postgraduate degrees and early career experience.

T-shaped professionals in design management are educated to have general knowledge in a few disciplines (e.g. management and engineering) and specific, deep knowledge in a single domain (e.g. design). This model also applies to companies, when they shift their focus from *small T* innovations (i.e. innovations involving only one discipline, like chemists) to big T innovations (i.e. innovations involving several disciplines, like design, ethnography and lead user for example). As in education, this shift makes it essential to breakdown silos of departments and disciplines of knowledge.

Therefore, from the content analysis of existing Pg DME course study it can be seen, that educating 'T-shaped' professionals is another approach of Pg DME in the UK.

9.1.3 Discussion 3: 'Problem-based' Learning

In the UK, design management courses are located both in design schools and in management schools and it is likely, but has not been formally established, that teaching and learning may be different in each. Both however, place emphasis on PBL (see 4.4), as '*the potential benefit of problem based learning is that it provides a better match of formal learning experience with environmental demands*' (Hunter and Tan, 2005:48).

'Design management education was originally an experiential subject' (Kefallonitis, 2007:23). This refers to the processes and techniques applied to manage design. Individuals who have experienced a consistent diet of this kind of teaching strategy tend to amend their preferred learning style to that which achieves success in that environment. Key writers in this area have recognised that each individual may have a preferred mode of learning (Kolb 1984; Honey and Mumford 1992). From previous research using Honey and Mumford's learning styles inventory, it has been shown that design students are strong in action and reflecting learning styles but less comfortable with theorising (Ashton 1995). Kolb (1984), Honey and Mumford (1992) confirm the idea that individuals in different professions have different learning styles and therefore different approaches to problem solving. Learning styles are sensitive not only to the prevailing educational diet of individuals but also cultural aspects.

The nature of design and DME in the UK today is a direct result of its development from its roots in apprenticeship and its fit with the traditions of academy which it joined relatively recently (Ashton and Deng, 2006). Tien, et al. (2003) suggested the use of PBL to develop competencies, which are the abilities that enable persons to continue to learn. Moreover, studies undertaken by Kozulin (1998) suggest that cultural backgrounds can perform a critical role in the development of problem definition and problem solving abilities. Therefore, intervention to develop missing skills may be required for a learner to make a successful transition from one learning system to another (Walker, 1996; Allen and Rooney, 1998; Mason, 2003).

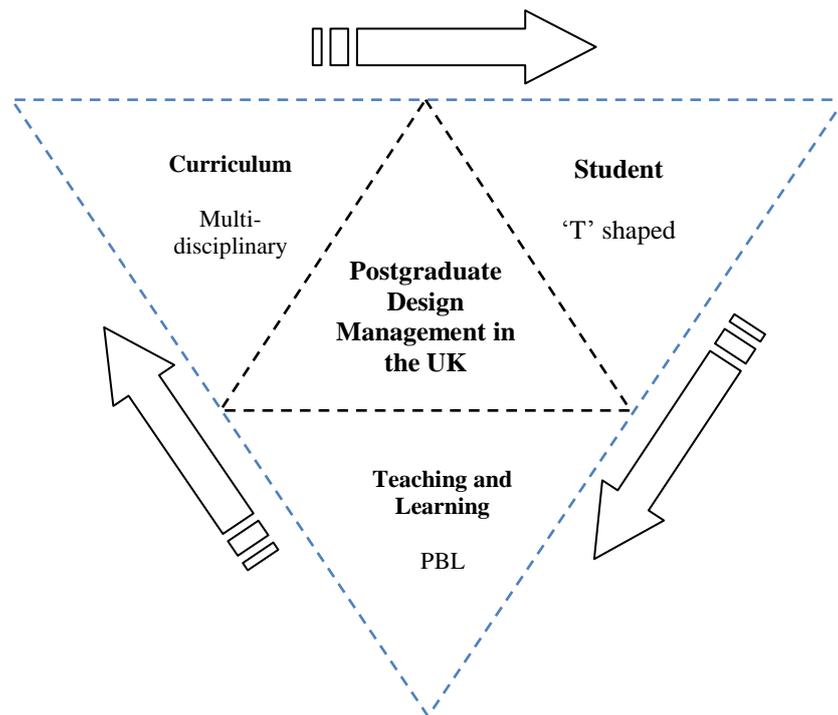


Figure 4.16 UK Postgraduate Design Management Education (Pg DME) Framework Summary

In conclusion, Figure 4.16 summarises the discussions of the key findings of the existing Pg DME courses in the UK, as a ‘Multi-disciplinary’ approach, educating a ‘T’ shaped skilled talent pool through ‘Problem-based’ learning.

9.2 Discussions of Key Findings of Existing Pg DME Courses in China

9.2.1 Discussion 1: Defining the “Design Management Knowledge” Identity

From the content analysis of Pg DME courses in China, it can be seen that the foundation of knowledge and techniques and content of Pg DME study differs substantially from course to course. Courses have widely differing aims and objectives, and the composition of the curriculum reflects that diversity. Analysis of course documents revealed a wide spectrum of subjects currently taught on master degrees and postgraduate courses in China. See Figure 4.12 for a classification of all the main subject areas taught in China. The listing

under subject headings offers an ideal of the breadth of coverage. This classification is also based on a detailed study of course documents of the universities and institutions selected.

From the review of existing Pg DME courses in China (Chapter 8), it can be seen that although educators seem prepared to find a place for design in the world of business, the exact meanings of the design course and its fit with traditional areas of study have yet to be clarified. Evidence suggests teaching content revisions in course content from year to year, in many institutions. Bodies of scientific and technological knowledge are regarded as relatively easy to identify, for example research methods and design policy, but the major problem is in making such information relevant and appropriate to engage closely with industry and the design profession. This may include many new methods and techniques that are now part of design practice. As such, industry needs, human factors, cultural factors, and user research are some of the subjects in this element.

The curriculum is perceived by teaching staff as being under unprecedented pressure to accommodate additional strands of learning, such as professional practice and business awareness. The widespread view is that increasingly unrealistic demands are being placed on courses to produce graduates with all-round skills in a growing number of areas. At this point, there is much potential in DME, and challenge is to fine-tune dimensions and definitions to establish a conceptual framework—as a guide to ongoing discussion, research and teaching. Therefore, course teams have to pick aspects of a curriculum they can consistently deliver. For instance, in a review of changing practice on industrial and product design courses in UK HE (TLRP, 2008), it has been suggested that the course should be in a format of ‘knowledge based’ – *‘influenced by their own background and experience which explains the different flavour and character of individual courses, with wide variations in the range of subjects and the depth to which they are thought’* (CNAA, 1991).

9.2.2 Discussion 2: Under the Influence of ‘Design Culture’

Due to the enormous population in China, the university entrance examination has become very competitive. For example, in 2010, 465,000 postgraduate students were recruited from 1,400,000 applications (Design Council, 2010b). However, the competition for places on design management courses in China is even tougher with considerably more applicants than places at the best universities, since design is the third most popular university subject in China after English and Computer Science (Design Council, 2010b). Therefore, universities are able to select the students they want and place an emphasis on a wide range of general skills as well as creative ability.

From the content analysis of Pg DME courses in China (see chapter 8), it can be found that Pg DME courses are largely engaged within design schools (see Appendix 1-5). However, with the continuous development of China's market economy, in the modern sense, design education still follows the Bauhaus design education model.

One of the most famous slogans for which the Bauhaus is renowned dates from 1923 and is “Art and Technology: A New Unity.” Wingler (2001) suggested that *‘Instruction at the Bauhaus includes all practical and scientific areas of creative work [...] 1), students are trained in a craft; 2), as well as in drawing and painting; and 3), science and theory.’* This is also the theoretical model in which the philosophy of the Bauhaus was grounded. An optimal archetypal structure of a design curriculum within the Bauhaus tradition would be a threefold articulation of art, science, and technology (Figure 4.17).

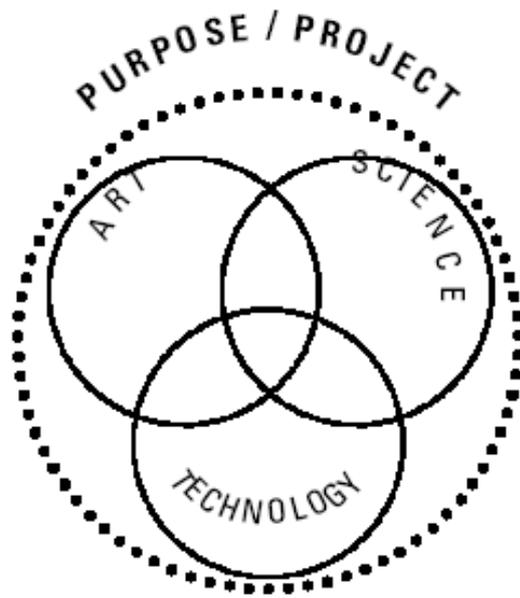


Figure 4.17 Archetype of Design Curriculum
Findeli (2001)

In some universities such as Shandong University of Art and Design, applicants sit entrance exams and a high academic standard is required. Strong technical skills are developed to support specialist disciplines in most cases. The heritage of ‘Bauhaus’ craftsmanship in China is important. Interestingly, it is seen design management modules such as ‘theoretical study of Art ‘design theory and principles’; ‘product design process’, to help draw a distinction between craft-based and industry-focused design.

However, the existing internal structure of design education and human capacity in knowledge has raised many problems in training, especially in current design education and the social development needs of the "disconnect" issue. The reason lies in the understanding and positioning of design. A fundamental change is to recognise the importance of “design thinking” beyond the original appearance of creative fine arts, to a discipline which has a bearing on design innovation and improving design competitiveness. Therefore, DME in Chinese design education needs to enhance design of cognitive change, as well as the idea of design in the present economic, social,

and cultural innovations role.

9.2.3 Discussion 3: Implementation of Innovation

Pg DME in china has been described as the collaboration and connection between design and science, technology and enterprise subjects. Several universities promote this approach and provide multi-disciplinary experiences for students. Universities use a wider range of descriptions – including ‘inter-disciplinary’ and ‘multi-disciplinary’, and are more varied in their approaches. There is a general acceptance that design needs to be taught and learnt in the context of innovation and that specialists from a number of disciplines should be involved in the design process.

Some universities are also developing a stronger focus on concept development and the wider use of design in society with, for example, projects at master’s level starting to address major current social challenges such as sustainable design, and impact on the ageing population in China. Emerging issues such as social innovation are now being included in student projects. For example, in 2008, The Design, Olympics & Harmony project between Shandong University of Art and Design (SUAD), in association with Cumulus, set out to evaluate the relationship between design, The Olympics and harmony. It comprised keynote speeches, a leader’s forum, exhibitions, cultural tours and a series of relevant programmes.

The various approaches espousing innovation reflect professional design practice and build on examples of design education in the UK (see 7.1.2). Moreover, business links and real world contacts also help students to develop practical and applied skills; collaboration between industry and academia is established and provides mutual benefits in the form, for example, of funding and live projects for universities and new talent for businesses (Design Council, 2010b).

a, Enhancing Design Management ‘Soft Skills’

In ‘Finding One’ of the comparative research study, one of the major conclusions drawn was that the impact of ‘indigenous innovation’ as the core of ‘reform and opening China’ policy requires the setting up of global business networks and the universities to provide curricula to suit the global climate (see 6.7). Research in comparative study of HE and design management related policy between the UK and China (see Chapter 6) also suggests that ‘*these ‘transitional’ companies are constructing a high-value, low-cost model in their attempt to compete for global market share. These cost pressures will not be limited to the indigenous workforce and are likely to be reflected across their global operations*’ (Ashton, Brown and Lauder, 2008). However, ‘globalisation’ has forced organisations to understand that ‘where to think’ is more than a question of finding the cheapest locations. It reflects other considerations such as the need for a critical mass of people who understand the organisation or share the collective intelligence necessary for advanced research and development. As a result, a growing appreciation of the fact that global design managers require certain ‘soft skills’, is fundamental. The consideration of ‘soft skills’ engagement in current Pg DME study is now considered essential to development.

Soft skills are typically hard to observe, quantify and measure. The skills have to do with how people relate to each other: communicating, listening, engaging in dialogue, giving feedback, cooperating as a team member, contributing in teams and resolving conflict. Leaders at all levels rely heavily on soft skills, too. Therefore, for soft skills, it is essential that people read the nuances in the context to modify and adapt their approach to achieve the performance outcomes they wish (Coates, 2006).

However, there are other soft skills more objective in nature, such as cultural sensitivity, the awareness of local customs, and fluency in a second or third

language, which have led to an interesting philosophical division among subjects. Furthermore, providing courses that cover these ‘soft skills’ usually comes at the expense of traditional, and often more rigorous subjects, and a divide now exists on whether to place emphasis in the curriculum on the issue of doing business in an increasingly networked global village or to eschew that in favour of traditional rigor (Ashton and Deng, 2006).

b, Collaboration between Industries and Academia

From the review in phase one of the comparative research study (Chapter 6), it is possible to determine that both the Chinese government and Chinese industry are willing to embrace design innovation to enhance their competitiveness and capture future growth. However, to meet the needs of both these stakeholders, a distinctive feature of the universities reviewed both in the UK and China was the collaboration both within the HEIs and with external businesses and other organisations (see 7.1.2; 7.1.4; and 8.1.3.2).

From the content analysis of Pg DME courses in China (chapter 8), it can be seen that there is widespread collaboration in place with universities outside Asia – particularly with American universities such as Stanford, Carnegie Mellon and MIT (Design Council, 2010b); Italian universities, as well as UK universities (also see 8.1.3.2). These collaborations vary in type, from advice and guidance via external examiners to staff exchanges and joint research projects.

Moreover, within the universities, there was evidence of collaboration across faculties, departments and schools. This usually involved design, engineering and management which enabled the multi-disciplinary activities to be developed and delivered. There was also a strong move towards working across art and design disciplines – sometimes with an inter-disciplinary approach, for example, media art, interactive design and digital technology, at

Tsinghua University; and sometimes to provide multi-disciplinary experiences such as collaboration between architecture, interior design, and advertising courses at Tongji University (also see 8.1.2 and Appendix 1-8).

The collaboration with industry was probably one of the most important elements in Chinese DMED. This ranged from universities that were set up by business (Lenovo) to those that had set up funding, research projects and internship arrangements. In Beijing, the links were similar and included international companies such as Microsoft, Motorola and IBM (Design Council, 2010b, also see 8.1.3.2). As most of the design jobs are with ‘in-house’ teams in large businesses, there are mutual benefits in these collaborations - with the businesses able to recruit the best talent and the students learning about industry contexts and corporate cultures. This focus in the curriculum on professional skills is in contrast to teaching and learning strategies that foster student enterprise and a start-up culture, as is the case in the UK (Design Council, 2010b).

9.2.4 Discussion 4: Setting up a Flexible Model for Course Delivery and Development

Looking at individual elements of the desk-based study, the state of Pg DME in China would appear to be stable. There is recognition that designers can no longer claim total “authorship” in taking a product/service through to realisation, as in the past. Increasingly, they now work in multi-disciplinary development teams comprised of different specialists (see 8.1.2). The ability to communicate effectively within the team is of unprecedented importance. Thus, this issue indicates that interest in design management comes from many quarters (see Figure 4.13). At Shandong University of Art and Design, master of design management study stresses the impact of design on project management and implementation, while case-focused Shanghai Tongji University design management professional development programme

emphasises the complexity of design strategy management and design leadership (see Appendix 1-9). This academic diversity suggests the breadth of potential design management audiences and that design schools have started to realise the importance of business and management training for designers. However, broader analyses, particularly of design management content in business schools and engineering schools curricula, indicate otherwise.

Currently, studies in design management are largely located in design orientated HEIs in China; the dilemma here is that, running a large proportion of management subject related modules may have an adverse impact on teaching resources within an institution and also detract from an art school's own disciplinary advantage. If design subject related modules are emphasised, this, in turn, may result in there being no clear impression of specialised “management of design” profession, thus blurring the boundaries between design management and artistic design. The questions that need to be considered are: in terms of the teaching and learning objectives; does the study aim to train generalists or specialists? In terms of teaching content; is the study “design” or “management” centred, in relation to curriculum content? In terms of teaching methods; does the study focus on “teaching” or rather the “transferability” to real life?

However, Cai. J, the course leader of design management in Tsinghua University argues that *“The core of design management courses is to provide students’ access to fully understand the value of design in business development and design’s essential role of innovation. By guiding students to learn and understand across aspects (such as marketing, consumer behavior, user research, business strategy, project management, brand strategy and planning, business development and innovation process, enterprise value creation and service processes, design team organisation and management processes), to enable students to master and apply the tools and methods. As*

well as abilities as long-term strategic vision and management operation; basic ability to design, planning and leadership (Cai, 2009:137).”

The above questions have manifested themselves in design management teaching practice and become the focal point of students, schools and society. In terms of curriculum development for the best cultural fit within the current Chinese social as well as educational situation, it suggested that china needs not only embrace successful models from the west, but also carry out an investigation into the specific Chinese HE circumstances. Thus, further possible formats of postgraduate design management study have been proposed, based on these finding.

a, MBA Format

From a UK experience, examples of design management study within MBA programmes (see 7.1.2.3), suggest there are generalists; business managers who not only play an occasional role in detailed design decisions, but who also benefit from understanding the broader value of design to the organisation. There are also specialists; individuals who seek to concentrate on such areas as marketing and production /service, who consistently have to deal with design dilemmas. Furthermore, managers, both in the public and private sectors, should have opportunities to refine their design management skills, and executives need to know how design can support the goals of their organisations. In this regard, specialised courses need to be developed and existing management programmes (such as MBA) should be updated to serve these groups.

Having reviewed the Pg DME programmes in universities in China one can come to the following conclusion: The role of design in business education is minimal at best. There appear to be no design management courses dedicated to MBA courses or run in business schools, design strategy, or design in

business in China. If business students are exposed to principles of design at all, they learn it tangentially, as part of a class on entrepreneurship or new product development. This seemingly obvious design management audience remains neglected. According to the past experiences learned from the west, Lockwood (2002), suggested several reasons for this situation, including:

- Lack of faculty interest and time;
- No intention of including design in MBA curricula;
- Absence of techniques for quantifying the value of design.

A good example of being able to resolve the above issues, is a parallel study of design management in the UK. One success is a design management module at the MBA Innovating and Designing Services programme at Imperial College London (see Table 4.2), an offering that combines design with operations and marketing management. It is a holistic view of design and corporate decision making that Hollins (2002) considers an effective model for courses internationally.

In essence, Pg DME in the implementation of business administration, not only enhances the value of design, but also enhances managers awareness of the design process and design management of knowledge, thus contributing to scientific and effective management of design, and ultimately reducing the company's costs. Meanwhile, the implementation of professional designers in management education is designed to help them develop innovative thinking and business-related capabilities, such as design proposals, communication, review and management capabilities, which can respond to the changing business, social, economic and technological environment.

b, Continuing Professional Development (CPD) Format

Further different types of postgraduate programmes were also observed throughout the study, including shared programmes with other schools /institutions. For example, MDM in Design Management (Environmental Design and architect design) at Tongji University is associated with Milan Polytechnic University. Moreover, there exist accredited programmes linked to professional development. Examples of this type of programme can be found at Tongji University, Design management for Designers and Design Management for Senior Managers. This provides creative design and management talent for a number of culture and creative industries.

CPD programmes can be focused on specialised topics or modules within the DME curriculum, or customised for an individual corporation or company. Each of these types of training programme may have its own strength in terms of quality and duration. *as 'It allows teaching planes to be arranged flexibly according to differing types of trainees, which provide opportunities for design management practitioners to enhance their professional knowledge and management expertise. .. it may also refer to the US MBA model, which has adopted a module –based system to allow students to freely tailor the course they need' (Liu and Zhan, 2008:21).*

Therefore, it might prove a valuable model for the early stages of Chinese Pg DMED. The intuitions may *'simply employ the short-course training model to reach their short –term development goals (Liu and Zhan, 2008:21)'*, avoiding the difficulties design management are facing. The difficulties are reflected in: authorising or validating design management degree courses; length of programme; and a shortage of teaching staff and faculties capable of delivering the course (Liu and Zhan, 2008).

9.2.5 Discussion 5: Teaching and Learning Strategies

The ratio of staff to students in Chinese universities is higher than the UK at most of the universities and contact time correspondingly greater. On average, as indicated by SUAD, design management courses have 21 hours contact per week, with the expectation that students work additional assignments hours.

Many of the courses and programmes are relatively new and highlight the different ways in which DME is developing. This is in line with the well developed concept of ‘T’ shaped designers who have a deep knowledge of their own specific area but also a broad knowledge of several others (see 8.1.2). One key issue is whether education should aim to create specialists rather than generalist in China, as the ‘T’ shaped model suggests that designers should be specialists first. Few of the universities, such as CAFA and Tongji, described a similar model focusing on the development of professional skills and then adding an ‘extension’ of new, inter-disciplinary skills. These additional skills were developed by providing multi-disciplinary experiences such as team work, collaborative projects and industry research. However, there is a sense as the Design Council Report on the multi-disciplinary design education (2010b) suggested that *‘design management is getting bigger’ and the world will need a wider range of design manager and design management specialists. a range of courses are potentially developing a number of different types of graduates - from the very specialist, technical designer to the broader generalist and ‘hybrid’ design manager’* (also see Figure 4. 13).

Overall, between industries, collaboration and PBL are becoming increasingly important topics in DME, particularly concerning design management and innovation in a multidisciplinary and international context. To create well functioning structures and practices between universities and companies remains, however, a tough challenge, particularly in terms of Chinese cultural aspects of learning styles (see 4.4.2). Unfortunately, Confucianism, rather

extraneously, is regularly presented as a primary factor in explaining differences between the learning habits and classroom behaviour of eastern and western students. However, Margetson (1994) whilst acknowledging that PBL has been accused of being without a knowledge base, believes on the contrary, that it requires highly structured knowledge acquisition but in the context of problems which motivate the learner. Therefore, as far as this study is concerned, it is interesting to speculate how Chinese teachers and learners might adapt to a western problem based, experiential type of learning or if it is possible to deliver the totality of a design management curriculum using more directive methods. There are many who believe that DME in the UK is rooted in a humanities approach to the detriment of the skills and knowledge that can link the discipline to the science influenced areas of engineering and technology. The assumption is that the nature of the cultures involved in the network and the type of network itself both influence the barriers faced in knowledge sharing.

9.2.6 Discussion 6: Meeting Universal Quality and Standards of Curricula

Professional and industrial practice is changing rapidly, a contributory factor in the difficulties in matching the quality and standards of DME provision to the perceived needs of employers. From the content analysis of the Chinese design management curriculum design, it can be seen that teaching quality and standards attempt to react to greater responsibility and accountability and increased expectations of stakeholders, especially the students and industries. Thus the curricula, and teaching and learning have been pressurised to shift their focus from one of quantitative expansion to one of emphasis on quality.

British models of design in industries have established new quality procedures which influence the approach of designers and engineers on a global level. New standards are being put into place. For example, one notable series of guidelines to assist the organisation in the design and development process of

new innovative products is BS 7000 Design management systems. There are currently seven standards in the series. These include (source based on BSI education website BS 7000, 2011):

- BS 7000–1: 1999; Guide to managing innovation. It describes how senior executives within organisations plan their products and services for three product/service generations.
- BS 7000–2: 1997; Guide to managing the design of manufactured products. This standard gives guidance on managing the design of manufactured products, and its process.
- BS 7000–3: 1994; Guide to managing service design. The standard gives guidance on the management of the design of service at all levels, for all design organisations and all types of service.
- BS 7000–4: 1996; Guide to managing design in construction. This document provides guidance on management of the construction design process at all levels, for all organisations and for all types of construction projects.
- BS 7000–5: 2001; Guide to managing obsolescence. This standard gives guidance for establishing a framework for obsolescence management and for planning a cost-effective obsolescence management process that is applicable through all phases of the product life cycle.

- BS 7000–6: 2005; Guide to managing inclusive design. Provides a comprehensive framework to assist enterprises, public sector and not-for-profit organisations introduce a professional approach to inclusive design.
- BS 7000–10: 2008; Glossary of terms used in design management. Defines terms used in design and its management.

The standard offers a comprehensive framework on the management of design, addressing issues of responsibility and consideration throughout all levels of organisational operation. This is a series of standards for the management of design and can support the design of manufactured products, of services, of construction projects, for planning obsolescence in all stages of the life of products, and for managing inclusive design (Hollins, 2008). Therefore, in the development of Chinese Pg DME, a universal quality and standard of curricula is needed for further improvement.

9.3 Conclusions of Second Findings

9.3.1 Tactical Level of Pg DMED

To conclude the discussions on the existing Pg DME courses both in the UK and China, summarise the key findings as ‘the tactical level of Pg DMED’.

Pg DMED on a tactical level addresses how design management study is organised within the institution. It aims to create a structure for design curricula, bridging the gap between objectives set through strategic level DME and the implementation of design management teaching and learning at operational level.

This includes the coordination of DME activities through a central body. It deals with defining teaching and learning activities, developing design

management skills and competencies, managing processes, systems and procedures, assigning of roles and responsibilities, developing innovative study concepts and finding new knowledge opportunities.

Outcomes of tactical Pg DMED are related to the creation of a structure for design management study within the organisation, to build internal resources and competencies for the implementation of teaching and learning.

9.3.2 Framework at the Tactical Level of Pg DMED in China

After the content analysis on existing Pg DME courses in China (Chapter 8), ‘A Coherent View of Pg DME Curriculum Model in China’ (see Figure 4.14) has been summarised by the author. This model distinguishes three dimensions of design management study; namely 1) Design Dimension of Study; 2) Management Dimension of Study and 3) Interdisciplinary and Multidisciplinary Dimension of Study.

The model also inherited (Best 2006, Borja de Mozota, 2003 and Topalian, in1990 in Oakley ed, 1990) the effective design management study of platforms to communicate between different modules and institutions on different levels. They are Strategic Level (Design Management as culture); Tactical Level (Design Management as function) and Operational Level (Design Management as project).

Under the dimension of ‘Interdisciplinary and Multidisciplinary Dimension of Study’, based on the idea of three levels of design management, the effective design management study of platforms to communicate between different modules and institutions are:

- **Ontology of design management:** applicability and practical concerns are stressed. Theory is complemented by methods, such as hands-on experience and case studies.

- **Systems of design management:** design management has a corporate emphasis and is moving from its status as a project-management subject in design to a business topic that involves such areas as branding and marketing communication.
- **Cultures of design management:** design management is associated with a nation's social and cultural policies. It is not only a component of training in design and business, but is also promoted by the government.

In addition, this model suggests that the implementation of design management study is a continuous stream of activities through innovation, design leadership and cultural infusion. These movements are expressed by a permanent exchange of information between all levels and across all functions for monitoring and decision making purposes, for managing design activities on a multidisciplinary platform.

However, in this chapter, a range of critical discussions has also been undertaken based on the model; the main findings at this stage of Pg DME in China are:

- **Implementation of Innovation:** A multi-disciplinary approach is seen as a guarantee for successful innovation because the assumption is that the approach will better deal with the complexity that characterises innovation into managing design. Therefore, it is crucial that postgraduate design management study in China creates a connection between students, HEIs and outside organisations (within the organisation and also between the organisation and students).

Providing comprehensive projects to update soft skills and enhance designer-focused information and knowledge are equally important. For soft skills, it is essential that people read the nuances in the context to modify and adapt their approach to achieve the performance outcomes they wish (e.g. teambuilding, solving problems, decision making, planning, observing, encouraging and motivating). However, there are other soft skills which are more objective in nature (such as cultural sensitivity, the awareness of local customs, and fluency in a second or third language, that have led to an interesting philosophical division between subjects).

- **Setting up a Flexible Model for Course Delivery and Development:** In terms of curriculum development for a closer cultural fit within the current Chinese social as well as educational situation, it is suggested that China needs to both embrace successful models from the west, but also investigate the specifics of Chinese HE circumstances. Thus, possible formats of postgraduate design management study have been proposed including MBA and CPD.
- **Teaching and Learning Strategies:** A successful design management curriculum not only includes a theoretical subject knowledge framework (e.g. Industry collaboration and PBL), but also aims to introduce a practical bent through flexible teaching methods; by collaborating with real life businesses. To create well functioning structures and practices between universities and companies is, however, a tough challenge under the Chinese cultural aspects of learning styles.

- **Quality and Standards of Curricula:** Professional and industrial practice is changing rapidly, a contributory factor in the difficulties in matching the quality and standards of DME provision to the perceived needs of employers. This requires a universal quality standard both in curriculum and teaching and learning management in China.

Thus, findings can be summarised into A to D, four crucial points for the development in postgraduate design management at a tactical level; to fuse into: ‘A Coherent View of Postgraduate Design Management Curriculum Model in China’. Put simply, a professionally administered design management course is a highly comprehensive and practical discipline. Figure 4.18 outlines the Framework of tactical level Pg DMED in China.

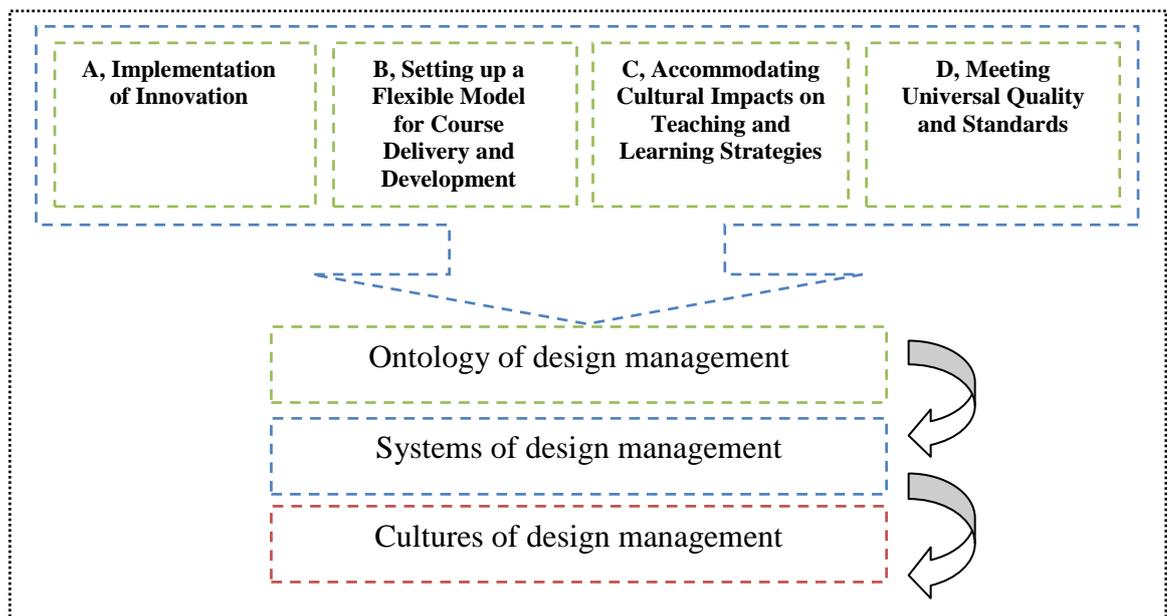


Figure 4.18 Framework at the Tactical Level of Postgraduate Design Management Educational Development (Pg DMED) in China

9.4 Chapter Summary

In this chapter (Chapter 9), the 2nd phase of comparative research study (comparative study of current Pg DME courses both in the UK and China) data has been identified into discernable patterns.

The important factors found (2nd Findings) in the 2nd phase of the comparative research study have been grouped into education domains, that Chinese postgraduate design management knowledge, curriculum and teaching & learning strategies should mirror, at the tactical level of Pg DMED. That is the establishment of a flexible course structure to facilitate and re-assemble the necessary resources to meet existing requirements from the economical environment, government policy and industry needs. It not only includes a theoretical subject knowledge framework, but also aims to introduce a practical bent through flexible teaching methods by collaborating with real life businesses.

What follows (Chapter 10) will be the study of design management academic experts' and design managers' views on Pg DME. This will contrast with the design management professional recommendations of change to Chinese universities' Pg DME. Their understanding of DME will be reflected in the diverse interpretations shown in existing Pg DME curriculum design both in the UK and China. The outcomes of the study and the holistic perspective possibly delineate an alternative vision of DME in terms of a coherent design management curriculum framework for further development at postgraduate levels of study in China. This alternative can shed new light on the epistemological dissemination of design management knowledge in design management communities in various contexts.

To conclude, the important factors found in the 1st and 2nd findings have been grouped into four issue domains or conceptual categories, showing what

Chinese postgraduate design management study entails, (see Table 4.6), which formed the basis of predictive determinants to be further researched in the next phase (the 3rd Phase of the comparative research study). While this is a large amount of information, it serves to focus on the forthcoming work, and also indicates the breadth and complexity of Pg DME in China.

Issue Domains	Discussion Points	Related Interview Questions to leading academic individuals both in the UK and China	Related Interview Questions to public and private sectors in China
All four A-D	The broad context of design management	1, 2, 3	1,
A, Cultural impacts in design management ‘innovation’; B, Building curricula to meet industry needs	The key issues for design management implementation in both public and private sectors	4, 5, 6	2, 3,4
C, Course contents and structure development; D, Teaching and learning strategies	The content which Pg DME courses currently deliver and skills developed	7, 8, 9, 10, 11	5, 6
All four A-D	Transformation issues from west to east and its applicability & relevance	12	---

Table 4.6 Question Mapping for the 3rd Phase of the Comparative Research Study

In short, the 1st and 2nd phase of the comparative research study have provided an insight into the research topic. The table above summarises the four issue domains as predictive explanations, which became the focus for further discussion in phase three of the research. Thus, these data also served to form the interview discussion guide for phase three, which is presented in appendices 3-1; 3-2 and 3-3. Lastly, phase two led to the identification of the study sample for phase three.

Chapter 10:

In-depth Interviews of Leading Academics selected both in the UK and China

This is the first of three chapters presenting the research findings from the 3rd phase of the comparative research study.

The chapter topics and the organisation of the chapters' content will reflect the data that emerged from the 1st and 2nd research findings. In this chapter, open-ended, in-depth interviews are undertaken with the key players in Pg DME both within the UK and China. A series of semi-structured interviews are conducted with course leaders, researchers and other senior academics involved in the operation of design management delivery. This would provide central information on existing postgraduate design management implementation.

Therefore, the aims of this chapter are to present the key views from the interviews carried out with leading academics in design management both in the UK and China. They are represented under the themes of:

- The broad context of design management;
- The key issues for design management implementation in both public and private sectors;
- The key issues of Pg DME; and
- Knowledge transfer issues from west to east and its applicability & relevance.

Figure 4.19 outlines Chapter 10.

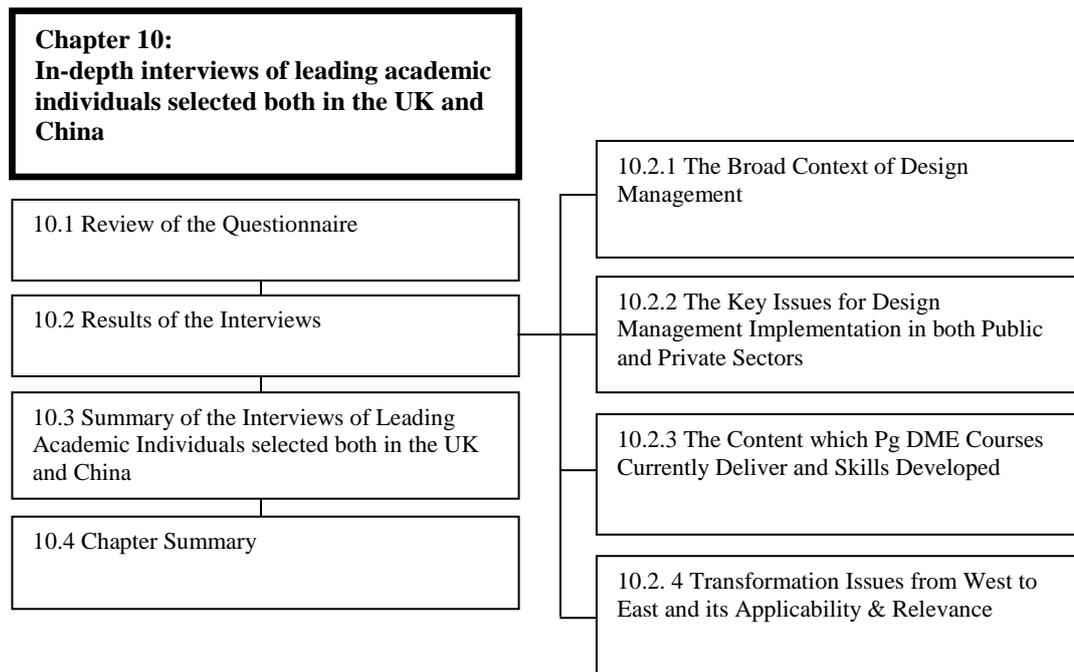


Figure 4.19 Chapter Map: In-depth Interviews of Leading Academic Individuals selected both in the UK and China

10.1 Review of the Questionnaire (also see Appendix 2-1)

This section reiterates the rationale for each question.

a, Part 1: Broad Context of Design Management: Definition; design management challenges and opportunities; design management versus design leadership. (Q1-3)

From an academic perspective, design management has matured into a recognised and valued discipline. Complementing the reality, businesses and professional organisations increasingly champion design expertise as vital to strategic success. This trend will continue, especially as design managers respond to new challenges. This leads to the first question. *Q1: What is your definition of design management?*

However, as design management takes a more strategic role in business processes and more academic programmes for design management are set up in HEIs, design management is becoming a complex and multi-faceted activity. But the fact that every firm is different does not diminish the importance of managing design tightly and effectively. This gives rise to the next question. *Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?* Indeed this question clarifies not only “what” but also “where”. Question 2 was therefore posed.

The term ‘design leadership’ has attracted attention in recent years in combination with the field of design management (see 3.3). In practice design managers within companies often operate in the field of design leadership and are design leaders in the field of design management. However, the term design leadership cannot be equated entirely with design management and the terms are not interchangeable. This leads to the third question *Q3: In your opinion, what is the difference between design management and design leadership?*

b, Part 2: Design Management in the Industry: Design management roles; design versus management. (Q4-6)

The second part of the questionnaire concerned the major shareholders in the DME system, and set out to establish the key issues for design management implementation in both public and private sectors. The breakdown of the questionnaire was based on design management roles; design versus management.

The questions start with *Q4: In your opinion, what is the outcome of design management role in the Public and Private sectors?* Design is an essential aspect of the process of new product development and innovation; the efficiency of which depends on the existence of management. However, there is no generally accepted agreement as to what particular activities this

management involves, or analyses of the most suitable context for its development or of the relationships that link these activities with performance. However, designers, in order to contribute to their activities, also import concepts developed from management science. This prompts the next question. *Q5: In your opinion, how can design be merged with best management practice?*

In the previous section, DME objectives have been discussed (see 1.1.1.1 and 7.1.2.1). However, the form that such systems should take is crucial. The study sought to test this with the following question. *Q6: In your opinion, should emphasis for the study of design management rest with Design schools or Business schools, or should a more integrated approach be adopted?*

c, Part 3: Pg DME to meet Industry needs: Module content; learning outcomes; curriculum design; teaching and learning methods. (Q7-11)

The third part of the questionnaire was to further establish the content which Pg DME degree courses currently deliver and skills they developed. Questions were based on module content, learning outcomes, and teaching and learning methods.

Q7 is the summary of module content: *What core elements do you consider important within design management postgraduate study courses?*

Learning outcomes refers to *Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?*

Q9 is the summary of curriculum design, and teaching and learning methods: *How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?*

Q10 reflects on the industry needs: Where they exist, the roles of ‘design manager’ are extremely varied, depending on the type of industry and company. *What is the key to developing curricula to meet the various needs of industry?*

And *Q11* is the requirement of employers’ needs: *In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?*

d, Final Part of the Questionnaire (Part 4): Transformation issues from west to east, and its applicability & relevance. (Q12)

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

10.2 Results of the Interviews

Semi-structured in-depth interviews carried out in the UK ($n=5$) and China ($n=3$) with course leaders; researchers and other senior academics involved in the operation of design management delivery, provided central information on the background of existing Pg DME courses. See Table 4.7, the key interviews of phase three of the comparative research study.

Interviewees of Leading Academics selected both in the UK and China	Organisational Institutions
UKIa1	MA Design Management Course leader; Northumbria University, UK
UKIa2	MA Design Management Course leader of Birmingham City University (BCU), UK
UKIa3	MA Design Management Course leader; Salford University, UK
UKIa4	Former MBA Design Management Course leader; University of Westminster, UK
UKIa5	MA Design Management Course leader; Warwick University, UK
CNIa1	MA Design Management Course leader; Shandong University of Art and Design, China
CNIa2	MA Design Management Course leader; Shanghai Jiaotong University, China
CNIa3	MA Design Management Guest Lecturer; MBA, Shandong University of Economic, China

Table 4.7 Key Interviews of the 3rd Phase of the comparative research Study: Leading Academic Individuals selected both in the UK and China

As detailed in Chapter 5 (see 5.2.3), detailed passes of the data set were undertaken in order to establish a number of common, emergent themes worthy of mention and scrutiny. The most frequently expressed themes are listed below, with commentary.

10.2.1 The Broad Context of Design Management (Q1-3)

As the results undertaken from questions 1-3 pertain to the broad context of design management, Table 4.8 outlines the overview of emergent themes.

	DM is extremely difficult to define	DM is in a constant state of change	Need to think strategically	Links with industry & the wider world	Multi-skilled
UKIa1	•	•	•		•
UKIa2	•	•	•	•	•
UKIa3	•		•	•	•
UKIa4	•		•		•
UKIa5	•	•	•	•	•
CNIa1			•	•	•
CNIa2		•	•	•	•
CNIa3			•		

Table 4.8 Emergent Themes of the Broad Context of Design Management from UKIa and CNIa

Broadly speaking, there appeared convergence of thought on the Broad Context of Design Management. All five interviewees suggested that the subject of design management itself was particularly difficult to define, influenced as it was by such transient issues as time and place^{UKIa1 & UKIa2} and stakeholder perspective^{UKIa3}. It was suggested that industrialists, academics and students all had a different take on what design management actually meant to them^{UKIa3} which rendered the search for a ‘one-size-fits-all’ definition futile^{UKIa5}. Moreover, the fact that people from different backgrounds all had very different perspectives on what an adequate definition of design management would be is compounded, to a certain extent, by the fact that specialists within the design management field itself do not appear to be able to reach a consensus^{UKIa5}.

What an institution (HEI) actually wants design management to be is not always what is wanted anywhere else. As such, DME has to continually respond to external factors and change, particularly true in areas of innovation, design and creativity and, as such, so will its definition^{UKIa5}. The term itself has changed over time and individual definitions represent one of several you could use for the same thing^{UKIa2}. Interviewee responses suggest that design management is extremely difficult to tie down or pigeonhole representing, as it

does, a number of broader facets and disciplines^{UKIa3}. Design straddles a huge number of areas from art to innovation to engineering and this has led to the need for DME to provide experts in, what would once have been, very distinct subjects^{UKIa5 CNIa1 and 2}. In short, a definition of design management appears to be ‘*a moveable feast*’ and the subject itself is ‘*about change*’^{UKIa1}.

This need for change is represented historically, as is the ongoing search for a suitable definition. The term design management, ‘*has changed over time*’^{UKIa1 & UKIa2}, from its beginnings in the early 1990’s to the present day, where ‘management of design’ has become a widely held representation of design management in certain quarters. Nevertheless, none of the 3 interviewees who intimated that this was indeed the case, was particularly happy with it^{UKIa2, UKIa3 & UKIa4}, asking ‘*what do you define design as*’?^{UKIa4}. In fact, there appears to be a general consensus that the term design management and its definition have emerged in order to gain ‘*academic acceptance*’^{UKIa2 & UKIa5}. Without a recognisable ‘*tag*’, however unhelpful^{UKIa1}, a discipline representing such a hybrid of interests and subjects would carry little political weight within an institution^{UKIa5}. One commentator even suggested that ‘the term itself is poor and has rendered the discipline powerless. The discipline has survived in despite of it, not because of it’^{UKIa2}.

Nevertheless, findings further illustrate that definitions of design management have evolved from a need for a more ‘intellectual definition’^{UKIa2} within institutions to one which is more compatible with an industrial perspective^{UKIa3}. The term ‘management’ has also come under scrutiny, as the UK becomes increasingly post-industrial. Commentators suggest that the term is more easily applied to a manufacturing process^{UKIa2, CNIa1 and 2}. Despite the difficulties in reaching agreement on a suitable working definition of design management, as highlighted above, all the UK 5 protagonists suggested that, as in many disciplines where innovation, idea generation and creativity were to the fore, the only constant was change and success would be measured in being

able to adapt to that change ^{UKIa2}. As design management is involved in the creation of something new, reacting to change is imperative.

As far as the future of design management is concerned, the need for strategic management is essential ^{UKIa2 CNIa1, 2 and3}, as is gearing DME to the needs of industry in an ever more global environment ^{UKIa2, UKIa3 & UKIa5, CNIa1 and 2}, ‘social innovation’ ^{UKIa1} and ‘academic underpinning’ ^{UKIa4}. Design management, as a discipline has an excellent future, as it is central to so many organizations, both public and private ^{UKIa1 & UKIa4} but there remains a need to furnish graduates with the skills necessary to operate in an extremely complex environment ^{UKIa2 & UKIa3}. In order to teach the skills, however, there is first a need to recognise what they are and the only way of doing this is through closer links with industry ^{UKIa3 CNIa1, and 2}. This will allow industry to ‘define what design management means to them rather than just an academic term of reference’ ^{UKIa3}. Employability is now at the heart of DME, providing graduates who are fit for purpose ^{UKIa1, UKIa2 & UKIa4}. As there is no job entitled ‘Design Manager’, ‘we will need to establish what kinds of job are available before we define the curriculum’ ^{UKIa3}.

The debate between leadership and management is intensifying ^{UKIa4} although ‘leadership is a more appropriate term nowadays because management is always associated with *Fordism* and leadership is a more effective term for the 21st Century’ ^{UKIa2}. As such, the skills needed by design management graduates to cope with the higher-level tasks associated with leadership will be reflected in the more intangible, tacit variety, including: team work, ideas creation and intercultural communication and awareness ^{UKIa2 & UKIa4}. Leadership appears to be afforded a more strategic, visionary role than management, by the protagonists ^{UKIa4 & UKIa5}, suggesting ‘how you do something’ rather than ‘what you’re doing’ ^{UKIa2 & UKIa5 CNIa2}. Despite this, there is still uncertainty on what the two concepts represent and all 8 of the interviewees suggest that, just as

when asked to define design management, there is more than one apt definition and often ‘tremendous tension’ between them ^{UKIa1}.

Time and place is, once again of primary importance when defining a term as complicated as Design Leadership, as the following statement quite clearly attests: *‘if you’d asked the same question 20 years ago, you’d have got a different answer’* ^{UKIa2}. Findings suggest that: The terminology used to situate design management is open to widespread interpretation ^{UKIa5} and the definitions provided are not always the most helpful ^{UKIa1}. Nevertheless, *‘we should be understanding the best organizational and education theory and that’s the platform we are going from – we may even lose the design management tag. The tag is useful in that it contains lots of polarized disciplines, whereas design leadership tends to say it’s about leading’* ^{UKIa1}.

10.2.2 The key Issues for Design Management Implementation in both Public and Private Sectors (Q4-6)

As the results undertaken from questions 4-6 pertain to the key issues for design management implementation, Table 4.9 outlines the overview of emergent themes.

	The functions of DM remain the same	Public & private sectors are converging	Practical application	A more integrated approach is needed	Multi-skilled & cross-discipline
UKIa1		•	•	•	•
UKIa2	•	•		•	•
UKIa3	•	•	•	•	•
UKIa4			•		•
UKIa5	•			•	•
CNIa1		•	•	•	•
CNIa2			•	•	•
CNIa3				•	•

Table 4.9 Emergent Themes of the Key Issues for Design Management Implementation in both Public and Private Sectors from UKIa and CNIa

As indicated above, the skills needed for future design management graduates to compete in a global, constantly changing environment are coming under greater scrutiny as are the industrial sectors in which they are likely to be based. Moreover, there is broad agreement amongst the interviewees that the skills must be transferable and applicable to any number of career pathways. Although a loss of focus may occur by not ‘identifying one area’ ^{UKIa3}, ‘whatever sphere design management is moving in, there is something like a basic design process’ ^{UKIa5} which can be applied across the sectors. In certain respects, the public and private sectors are ‘becoming increasingly similar’ and, as such, there are ‘increasingly similar outcomes’ ^{UKIa2}. This suggests that the experience of working in one sector still stands, when moving to another ^{UKIa5}, as are the skills needed to operate in them. The processes of design management ‘how you communicate systems design’, for example, are ‘important across all sectors’ ^{UKIa2 & UKIa5}. These hard and soft skills are ‘valid in any context’ ^{UKIa5}. Thus, ‘the functions of design management remain the same whether situated in the public or private sectors’ ^{UKIa3}.

However, one interview, whilst agreeing to the broader concept of transferability, suggests an air of caution by intimating that it all depends ‘on which aspect of design management you take’ ^{UKIa1}; returning once more to the thorny issue of definition. Whilst having people with a combination of skills is a positive thing, because there is no ‘grounded theory of what design management is’ ^{UKIa4}, there remains an argument as to which skills are more important to the stakeholders ^{UKIa1 & UKIa2, CNIa1 and 2}. Due to the multitude of skills designers’ exhibit, merging design with best management practice ‘is a bit like herding cats’ ^{UKIa2}. Yet, the design relationship with ‘any kind of so-called best practice is often a critical one’ ^{UKIa4} and, as such, is ‘an ongoing debate’ ^{UKIa3} in design circles. At the moment, the fact that there exist ‘two separate disciplines [which] represent two different schools of thought’ ^{UKIa3} and the ‘dichotomy [that] design management is a non-tem’ ^{UKIa2} are clouding the debate.

Merging design with best management practice, therefore, may mean different things to different people who operate in very different worlds ^{CNIa1 and 2}. It may be easier for the business manager to come to terms with as *'it is the sort of thing they are engaging with, whereas an educationalist is not'* ^{UKIa5}. Furthermore, the relationship with *'standardised best practice'* will always be a difficult one because *'best practice is just formulation, a generalisation of things that have worked in the past and design is not about past concepts, it's about the future'* ^{UKIa4}. In order to overcome this particular hurdle business managers and designers must enter a *'critical dialogue'* ^{CNIa1 and 2} where *'best practice can rethink itself'* ^{UKIa4}. Furthermore, one must *'educate business on what design management entails and vice-versa'* ^{UKIa3} and create a type of person with *'more than one skill-set'* ^{UKIa2}.

In order to produce graduates proficient in a number of diverse skills, both management and design, requires a more integrated approach to DME ^{UKIa2 & UKIa3, CNIa1 and 2}. There is further widespread convergence of thought on the fact that the skills learnt should be practical and applicable ^{CNIa1 and 2}. These skills could be practised and honed in collaborative partnerships where opportunities for undertaking *'live projects'* were available ^{UKIa1}. However, there remains a powerful ongoing debate on where DME should actually lie. Whilst *'99%' of design management courses are located within Art and Design Schools'* ^{UKIa3}, most MA courses in design management have been developed in association with some sort of business school ^{UKIa2}. Firstly, this suggests a move towards the integrated approach alluded to above yet the issue continues to represent a *'context-specific question'* ^{UKIa5}.

Undoubtedly, the two schools can work in unison as *'there are certain aspects of intangible values which the business school have thought about' which haven't been thought about in design and vice-versa* ^{UKIa2}. There is also recognition that *'we can no longer give business education in the way we always have'* ^{UKIa1} and *'business may not understand design, but they do*

understand organisations and organisational concepts'^{UKIa4}. Yet, interviewees also suggest that, despite the desire to move away from craft-based design management favoured in the 1950s and 60s, influenced by the Bauhaus School, to a more integrated approach, *'it's never quite happened in the UK'*^{UKIa5}. Findings suggest that this may be attributable to designers feeling uncomfortable leaving *'their artistic box'* and having to work to environmental, institutional and external constraints, such issues of accreditation^{UKIa4}. However, one of the interviewees had a strong opinion that design management should be rest on the management subject, with a design integrated approach^{CNIa3}.

Yet, data suggests that, wherever design management sees itself, practitioners cannot lose sight of the bigger picture; that being *'the partner in all of this is industry'*^{UKIa1}. The curriculum rests *'outside the institution and therefore it should ideally be partly work-based'*^{UKIa2} irrespective of where the students are drawn from or in which faculty or school design management rests, even if it finds itself located *'between business and design schools'*^{UKIa5}.

10.2.3 The Content which Pg DME Courses Currently Deliver and Skills Developed (Q7-11)

As the results carried out from questions 7-11 pertain to the results of DME content, Table 4.10 outlines the overview of emergent themes.

	Core modules: theory based	Application & reflection	PBL	Transferable skills	Teaching & Learning Strategies
UKIa1	•	•	•	•	•
UKIa2	•	•			
UKIa3	•		•		
UKIa4	•			•	•
UKIa5				•	•
CNIa1	•		•	•	•
CNIa2	•				•
CNIa3				•	

Table 4.10 Emergent Themes of the Content which Postgraduate Design Management Education (Pg DME) Courses Currently Deliver and Skills Developed from UKIa and CNIa

There is, once more, widespread convergence of opinion at this stage of the questionnaire and there is recognition of the need to apply theory to practice: *‘Teaching from books is inappropriate – teaching from practice is more appropriate but the best thing to do is to cherry pick from both areas’* UKIa2, CNIa1 and 2. However, there is less convergence on how this should be implemented. Certain protagonists suggest that there remains a need to underpin design management study with a *‘theoretical background’* UKIa3. This could be provided through modules traditionally associated with design management study; business environment, strategic management and project management UKIa3 & UKIa4, CNIa1 and 2, for example, all geared to design function. On a more political level, by incorporating business and management modules in design management study, it is easier to prove academic rigour than by simply promoting the more intangible skills associated with the communication of tacit knowledge, even if research suggests they do in fact work UKIa5.

However, there appears to be a huge difference in provision between institutions, regarding design management delivery. In some universities, courses remain *‘quite conventional’* UKIa4 whilst others do *‘not have a lot of the traditional things in it’* UKIa1. The reasons for this, according to the research data, may be that moving away from more traditional ways of doing things

requires a leap of faith for both students and teachers ^{UKIa1}. Nevertheless, all interviewees claim that one of the most important outcomes of design management study is *'understanding theory and applying it to projects in different ways and then reflecting on it'* ^{UKIa1} and this is reflected in the *'two types of learning outcomes: subject based knowledge and skills based'* ^{UKIa3}. The challenge, however, is *'how to translate this knowledge'* ^{UKIa5} and apply what you know to situations.

As such, teaching and learning strategies must *'encourage exploration and PBL'* ^{UKIa3, CNIa1}. Furthermore, the environment must be conducive to learning. In order to enhance soft skills and develop tacit knowledge, learning must be made fun ^{UKIa4} as certain aspects, *'which are professional [...] cannot be taught, but rather experienced'* ^{UKIa2}. Whilst study needs a bounded framework ^{UKIa4}, *'systematic learning does not work in modules, it works much better outside the classroom'* ^{UKIa5} and it is the application of and reflection on this learning which make the intangible skills, such as idea generation, business presentations and cultural awareness ^{UKIa5}, visible ^{UKIa1}. At undergraduate level, courses are focused on making and doing things you can see, but at PG level there is more emphasis on the tacit skills, understanding and the things that one cannot see ^{UKIa1}. It is about *'understanding who you are and what your strengths and weaknesses are'* ^{UKIa1} and this can be applied across any model or module and serves as a primary element of CPD ^{UKIa4}.

However, there was no broad agreement on what an MA in design management should look like, in relation to developing curricula to meet the needs of industry. A very important reason is to solve the employment problem, therefore taking the weight of the Chinese government ^{CNIa1 and 2}. Certain commentators suggest that *'we need to tailor the programme to meet the needs of different types of industry'* ^{UKIa3} whilst others work from polar opposites and when asked how they meet the needs of individuals simply replied *'we do not. We do not focus on individual roles: graphic designer, for example'* ^{UKIa1}.

There appears to be a recognition that it might be beneficial to have a course which ‘*addresses equally all those spheres of business*’^{UKIa5} but this is impractical and modules are often weighted in favour of one particular element; i.e. one in which the course leader has a particular bent; creative industries, for example^{UKIa5}. As teaching and learning take place in more fluid environments, this is reflected in assessment practices^{UKIa3} and the need for well-structured and scaffolded supervision^{UKIa1}.

This, again, has resource implications, which need to be addressed, as the more fluid modular frameworks being offered demand a change of thought^{UKIa5}. However, there also seems to be a slight divergence here on what exactly should be assessed. Certain interviewees believe that process is more important than product^{UKIa1 & UKIa4} and, as such, assessment is based around reflection and understanding rather than the completion of an in-company project; ‘*to evaluate, reflect and move on*’^{UKIa1}. Alternatively, there appears to be another school of thought, which believes that the project itself should be assessed^{UKIa3}.

Despite these reservations, all 8 protagonists believe that the way to respond to individual need is to ask both the student and industry. Successful courses, however they are designed ‘*must have strong links with industry*’^{UKIa1, UKIa2, UKIa3 & UKIa4} and there is a need to develop graduates who understand the design process, not just their own role in it, ‘*separated into little boxes*’^{UKIa4}. ‘*Sandwich courses*’^{UKIa3}, ‘*live projects*’^{UKIa1 & UKIa3} and ‘*strong links with industry*’^{UKIa2 & UKIa4} offer a model from which to work. Design management educationalists need to ‘*co-create*’^{UKIa1} with industry in order to provide courses and graduates that are ultimately fit for purpose^{CNIa1}. How this is undertaken, remains ‘*the million dollar question*’^{UKIa3}.

10.2.4 Transformation Issues from West to East and its Applicability & Relevance (Q12)

As the results carried out from questions 12-16 pertain to the transferability of design management knowledge and education, Table 4.1 outlines the overview of emergent themes.

	We need courses to teach a broad array of skills	Cultural differences are important	Maintaining standards are important	More collaboration across cultures	More research needed in the field
UKIa1					•
UKIa2		•	•	•	•
UKIa3	•		•		•
UKIa4	•			•	
UKIa5		•			
CNIa1		•		•	
CNIa2				•	
CNIa3			•		•

Table 4.11 Emergent Themes of Transformation Issues from West to East and its Applicability & Relevance from UKIa and CNIa

This part of the questionnaire proved to be the one with the least convergence of opinion and ideas as, whilst there was an overall belief that culture influenced practice in some way ^{CNIa1}, there was no one suggestion as to how. Beliefs expressed ranged from the need to do things differently in different countries ^{UKIa2} to a suggestion that countries and continents themselves were not homogenous ^{UKIa4}. Furthermore, responses such as: ‘*I do not think cultural differences (societal) represent a big problem as it’s industry, rather than culturally driven*’ ^{UKIa3} seem to suggest that there may be other, more important, factors at play in the successful transfer of knowledge. ‘*The economic environment*’ was cited as one such factor ^{UKIa3} and is raised by another interviewee who explains that ‘*you should really look at whether the corporate and manufacturing sector in China is at the stage where you can integrate some of your graduates into it*’ ^{UKIa5}. Design schools need to operate

in the real world, *'determine where their students are going to come from and, ultimately, where they are going to go'* ^{UKIa5}.

Furthermore, design schools are now faced with a dilemma as *'we want an MA to meet the needs of industry but we do not want to lose the quality'* ^{UKIa3}. Maintaining an academic standard is an issue in any collaborative partnership where teaching and learning is transferred to a new host country or culture ^{UKIa2} and ^{CNIa1}. This is particularly relevant to the discussion of comparability and equity of teaching and learning processes where one culture may not be able to, *'because of constraints, be able to assess students, for example, in a similar fashion'* ^{UKIa3}. For example, *'in China, the system is far too rigid [...] and most people follow what the government says'* whereas, in the UK, there is a tradition of *'the eccentric investor, small businesses and entrepreneurship'* ^{UKIa5}.

There is also an issue of how relevant courses are to overseas students who come to the UK to study. Whilst there are now greater numbers of UK students undertaking part of their studies overseas ^{UKIa2}, this is offset by people coming in. By providing international students with the skills and knowledge *'to go back home and change things'*, you can tap in to the *'sustainability, regeneration, well-being and social innovation'* concepts that governments are now espousing ^{UKIa1}.

Being able to work together, across countries, cultures and disciplines is a must for modern design management graduates and this need to be recognised in the skills they develop throughout their course ^{CNIa1} and ². Intercultural communication and internationalisation are becoming *'buzz words'* ^{UKIa2} in DME as it responds to the challenges of an ever more globalised world and this is reflected in awards and modules across all disciplines ^{UKIa3, UKIa4} and ^{CNIa1}. As such, *'broadly speaking, in the UK, we are providing conversion courses for*

management students, who do not have design knowledge and vice-versa, with very strong links with industry' UKIa4.

However, China is a totalitarian system of society; the HE is closely linked with the government leadership. Therefore it is essential for the university to receive open school concept and encouragement from the national leaders, with a promising vision CN1a1. Design management therefore acts as a platform, enabling designers and managers to have efficient communication to conduct a successful project, as well as developing DME CN1a1.

10.3 Summary of the Interviews of Leading Academics Selected both in the UK and China

This chapter has highlighted a number of pertinent themes, which emerged from the data set. By and large, findings reveal that the interviewees exhibited convergence of thought and opinion throughout the process and a detailed picture of current design management has been drawn from the leading academics in both countries (see Table 4.12).

	Themes concluded in the interviews				
Q1-3	DM is extremely difficult to define	DM is in a constant state of change	Need to think strategically	Links with industry & the wider world	Multi-skilled
Q4-6	The functions of DM remain the same	Public & private sectors are converging	Practical application	A more integrated approach is needed	Multi-skilled – cross-discipline
Q7-11	Core modules: theory based	Application & reflection	PBL	Transferable skills	Teaching & Learning Strategies
Q12	We need courses to teach a broad array of skills	Cultural differences are important	Maintaining standards are important	More collaboration across cultures	More research needed in the field

Table 4.12 Summary of the Emergent Themes of the Results of Interviews of Leading Academics Selected both in the UK and China

From an examination of the findings, it is apparent that the prominent features, which emerge, can be divided into two distinct groups. These groups centre on the more macro issues of situating design management in the wider world, valuing a strategic approach to its implementation and at micro level pertaining to course design and classroom activities. On further inspection, these two groups can be subdivided in order to explore the phenomena in greater detail:

Strategic level of Pg DME implementation: 1) Situating design management knowledge and its education; 2) An integrative, collaborative approach.

Operational level of Pg DME implementation: 1) Teaching and learning strategies; 2) Skills.

10.4 Chapter Summary

In this chapter (Chapter 10), open-ended, in-depth interviews were undertaken with the key players in DME both within the UK and China. A series of semi-structured interviews conducted with course leaders; researchers and other senior academics involved in the operation of design management delivery.

From an academic perspective, design management has transformed into a recognised and valued discipline in China. The summary has highlighted a number of pertinent themes, which emerged from the data set, and these will be explored in greater detail in Chapter 12. By and large, findings reveal that the interviewees exhibited convergence of thought and opinion throughout the process.

An investigation will be further undertaken in next chapter (Chapter 11), which going to be set to test ‘design management’ theory against industry needs through a collection of primary data both in the public and private sectors in China.

Chapter 11:

A Collection of Primary Data in both Public and Private Sectors in China

This is the 2nd of three chapters presenting the research findings from the 3rd phase of the comparative research study.

This chapter sets out to test ‘design management’ theory against industry needs through a collection of primary data both in the public and private sectors in China.

This set of in-depth interview data is data collected on design managers’ current roles and responsibilities. In order to gain an accurate insight into how design managers work in their business environment, the results highlight issues at different levels and perspectives of understanding on the current design management development situation in China.

The aims of this chapter are to present the key views from the interviews carried out from Chinese public and private sectors. They are under the theme of:

- The context of design management;
- The key issues for design management implementation in both public and private sectors; and
- The key issues of Pg DME.

Figure 4.20 outlines Chapter 11.

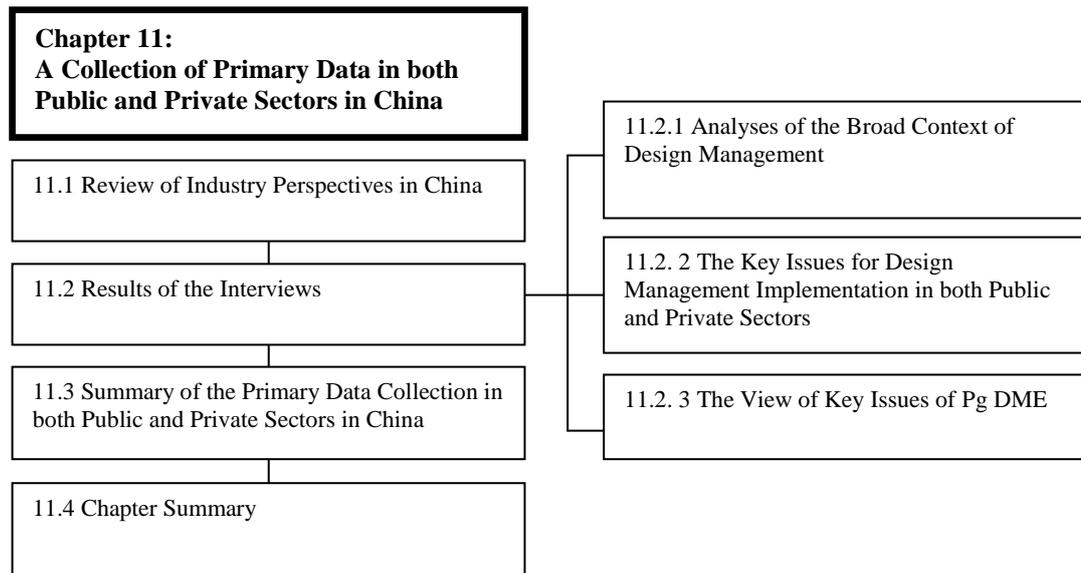


Figure 4.20 Chapter Map: A Collection of Primary Data in both Public and Private Sectors in China

11.1 Review of Industry Perspectives in China

According to the Design Council's report on the multi-disciplinary design education fact-finding visit to South Korea and China (2010), the design related work in the industry is divided in two ways: in-house design and design consultancies (Design Council, 2010b).

The report further suggested '*In China, design industry is certainly centred on large companies, with designers working mostly in in-house teams rather than in small design consultancies*'. Many global brands like Lenovo, Haier put design at the heart of their activities, and invest in design and brand building, with ambitions to sell more products to consumers worldwide. For Example, in 2002, Lenovo China invested one million RMB and established Lenovo Product Design Development Centre. In 2006, the company invested more than 10 million RMB (1 million GBP) in product design, associated with more than 80 professionals in 10 specialised design teams around the world (Qian, 2007).

Interestingly, the report also argues that where there are design consultancies in China, they are often bigger than those in the UK, with 30 – 40 employees cited as typical ‘*compared to fewer than five in the majority of UK agencies*’ (Design Council, 2010b). However, there is still a way to go to develop the demand in China for design services – ‘*there are as yet few clients who understand the real economic value of design and are prepared to pay sufficiently for it*’ (Design Council, 2010b).

Therefore, under the current mapping and development of Chinese design industry, this chapter has documented 10 interviews with carefully chosen design managers from both public and private sectors in China. Details of the institutions who took part and the position of the interviewees are listed below (see Table 4.13):

As a result of in-depth interviews, data were collected on design managers’ current roles and responsibilities. The questionnaire is based on parts 1-2 of the UK questionnaire (see Appendix 2-2).

Interviewees	Public/ Private Sectors	In-house /design consultancy	Organisational Institutions
CNi1	Public	In-house	Head of External Service Centre of Promotion Bureau, Shandong Provincial Government, China
CNi2	Private	In-house	Deputy General Manager, Shandong Provincial Business Group, China
CNi3	Public	In-house	Senior Editor, QILU Press, China
CNi4	Public	In-house	Film Producer, Shandong Sky TV, China
CNi5	Private	Design consultancy	General Manager, Shandong International Advertising Consultancy, China
CNi6	Private	Design consultancy	Director, Beijing Murano Art Consultancy, China
CNi7	Private	Design consultancy	General Design Engineer, Shandong Architecture Design Institution, China
CNi8	Private	Design consultancy	Director, Jinan Suochi Design Management Consultancy, China
CNi9	Private	In-house/ design consultancy	Design Director, Industrial Design Centre, Hisense E-information Industry Group, China
CNi10	Private	In-house	Senior Customer Experiences Design Manager, Microsoft R&D Group Beijing, China

Table 4.13 Key Interviews of the 3rd Phase of the comparative research Study: Design/ Management Individuals from both Public and Private Sectors in China

11.2 Results of the Interviews

As suggested in Chapter 5 (see 5.2.3) detailed passes of the data set were undertaken in order to establish a number of common, emergent themes worthy of mention and scrutiny. The most frequently expressed themes are listed below, with commentary.

11.2.1 The Broad Context of Design Management (Q1)

The results from questions 1 pertain to the broad context of design management. Table 4.14 provides an overview of emergent themes.

	To meet social needs	To meet the demands of the market and customer/user	Soft Skills	Multi Skills	Teaching and Learning in a Real Life Environment
CNIi1				•	
CNIi2	•	•			
CNIi3				•	•
CNIi4			•	•	
CNIi5	•	•		•	•
CNIi6					
CNIi7		•	•	•	
CNIi8			•	•	
CNIi9					
CNIi10					

Table 4.14 Emergent Themes of the Broad Context of Design Management in both Public and Private Sectors from CNIi

Broadly speaking, there appeared convergence of thought on the broad context of design management.

Design cannot depart from the concern of understanding market and company demand. Design management is a suitable platform for connecting design and business whilst focusing on the urgent working abilities of designers' needs ^{CNIi-8}.

Furthermore, design management combines resources with ideas and concepts. Currently, design favours the development of multi-direction and systematisation. This requires design management students not only to study design related knowledge, but also design career plans, particularly the occupation plans for young design managers ^{CNIi1}.

Design management 'knowledge' is extremely important for a designer. Knowledge includes both the design specialised accomplishments, also abilities to communicate across a myriad of societies and culture; exhibiting the abilities that meet market needs. However, like every profession, it requires specialised knowledge support as its core foundation ^{CNIi8}.

Design skills provide a further foothold for designers in the design management profession. Other requisite skills include the ability in technology, management, and leadership. Marketing and strategy are equally very important ^{CNIi7}.

Design is not only about creativity however, it combines with specific industries and infuses ideas into systematic process for further development. Only by educating students in this way, will the demands of social needs be met ^{CNIi2}.

The key aspect of design management personnel should have is the ability to master related knowledge, for instance the knowledge of design, marketing and creativity. However, the idea of ‘creativity’ should emphasise the ability of real life design project ^{CNIi3}.

Design has its unique role in the business environment; it is the ‘design’ which has been ‘limited’. The basic requirement of ‘Design’ is to be ‘artistic’ and ‘beautiful’. However, this explanation of ‘limited design’ means design works to constraints of form, rather than other equally important facets of the design process. However, certain commentators suggest that design in the business environment is not necessarily restricted, but achieves a kind of cognition depending on the path being taken. Designers need to realise the implications that choosing a certain path requires experience of real life business and a commercial knowledge of design ^{CNIi5}.

‘Design management is how to control the management of design, to inspiring and communicating in a design project, and dealing with departments and related aspects of the relationships’ ^{CNIi4}.

11.2.2 The Key Issues for Design Management Implementation in both Public and Private Sectors (Q2-3)

The results from questions 2-3 pertain to the key issues of design management implementation; Table 4. 15 outlines the overview of emergent themes.

	To meet social needs	To meet the demands of the market and customer/user	Support from national policy	Soft Skills	Multi Skills
CNi1	•				
CNi2		•		•	
CNi3	•				
CNi4		•		•	•
CNi5			•	•	•
CNi6		•		•	
CNi7					
CNi8	•	•	•	•	
CNi9		•		•	•
CNi10					•

Table 4.15 Emergent Themes of the Key Issues for Design Management Implementation in both Public and Private Sectors from CNi

11.2.2.1 To meet Social Needs

3 out of 10 interviewees have emphasised design management implementation in both public and private sectors is to meet social needs.

To successfully integrate design management thinking and practice into an organisation, the current design management training model needs to be changed to bridge the significant gaps between DME provision and industry needs. It should be undertaken in two ways ^{CNi11}:

- Design management teaching objectives deriving from school, society and industry needs must be provided and skills effectively coordinated and communicated;

- Furthermore, training the practical skills students need to manage design efficiently must also be provided. This requires establishing an integrated combination of common knowledge between students' practice and learning experience and the needs of employers.

In essence, the key is to change the mode of traditional teaching, in line with social status and meet the needs of the community, in order to achieve a truly effective transition of design management knowledge from schools to businesses. However, graduates working in the industry should be infused with the elements of expertise, including the accumulation of professional knowledge from the school to industry ^{CNi3}.

After all, it is essential to adapt to societal culture (large culture) and industry culture (small culture). The challenge of becoming a design manager in industry is to meet the comprehensive capacity of the society; this capacity is reflected in team awareness and adaptability in the organisational environment ^{CNi3, 8}.

11.2.2.2 To meet the Demands of the Market and Customer/User

5 out of 10 interviewees emphasised design management implementation in both public and private sectors is to meet the demands of market and customer/user.

Each job has its own responsibilities and peculiarities and design management is no different. A design manager requires abilities to be innovative, as well as project implementation capacity ^{CNi2, 6}. However, depending on the company and industry, the requirements of being a design manager will be different. In short, the design manager must first understand corporate culture as this is reflected in design projects ^{CNi2, 8}.

Successful design projects need to meet not only the requirements of corporate culture, but also understand customer and market needs. *'I think that customer demand is the priority. Effective design should be based on customer requirements, and transferring into innovative design. Design managers should manage design to meet customers/users' needs, whilst providing products and services above the demands, and expectations of customers/users'* ^{CNIi2}.

Any product or service that a company makes for profit should first have its market demand and recognition of consumers and users, one of the interviewees suggested that *'I understand that the pursuit of designers and artists is not the same. In a commercial environment, the design of products and services must have a market; without a market, design would not be able to survive'* ^{CNIi2}.

Therefore, the management of design in business must meet customer requirements and the further premise of a design project therefore is to conduct market research ^{CNIi4}.

11.2.2.3 Soft Skills

6 out of 10 interviewees emphasised design management implementation in both public and private sectors is to equip designers with soft skills.

Wealth of experience is very important for design managers based in enterprises as the design manager is expected to be open-minded, innovative and activate ^{CNIi5 and 2}. In terms of the professional skills needed by design managers, in addition to the knowledge of design and business studies, they need a wide range of knowledge such as engineering and the humanities ^{CNIi5 and 8}.

On a personal level, it requires corporate loyalty and, in particular a persistent and resilient personality. Since the current economic downturn began, the drop-out rate has been significantly reduced. Most companies do not like to see graduates leave the job as soon as they have been trained by the company; especially since the company has put a lot of effort in^{CNIi6 and8}. Most importantly, apart from solid professional knowledge and broad horizons, design managers should also have peace of mind, a solid non-impulsive attitude. This is particularly true of innovative design teams, who need to be able to communicate, and accept recommendations^{CNIi4}.

One of the interviewees suggested: *'I think the design managers in the current industries can be divided into three categories'*^{CNIi9}. They can be divided as: 1) Graduates just entering the industry, whose advantage and strength is being 'imaginative'. These kinds of design managers are encouraged to learn 'convergence'; that is, control ability. 2) Over time, the transition to middle management level of design manager. That is, design managers are very clear and mature concerning the scope of their duties. 3) To the senior design manager, we promote as the 'let go' ability. However, innovative capability is seen as the core competence competing among enterprises, although some senior design managers who have been in the industry for a lengthy period of time may have 'limited' innovative ability after years in the same job / routine. This 'let go' policy aims to 'release' capability that integrating innovative design to meet the market needs^{CNIi9}.

11.2.2.4 Multi Skills

4 out of 10 interviewees emphasised the key issues for design management implementation in both public and private sectors as being to equip students with multi skills.

The modern advertising industry in China is no longer the stereotypical one it is often assumed to be, for example. It is not just a logo, or a design package. To attract customers, it needs attention from design proposals and design presentations, to team working. Otherwise the company will lose customers. Therefore, the requirement of the abilities of design management students should include: professional competence and generalist abilities, such as a depth of industry knowledge, design ability, the ability to grasp the design concept, as well as a capacity for insight into market areas (such as real estate, finance, IT and media). The knowledge needed to succeed in the design industry is complex, so Pg DME should provide subjects which meet the needs of the organisations ^{CNIi5and6}.

Comprehensive ability and extensive knowledge are very important for being a design manager. One of the interviewees believes that design works and projects must be related to one's personal experience. If there is no insight into one's personal life, no experiences in one's life, then the design work is superficial. *'Only people who know how to enjoy life will make designs which are more acceptable to the public'* ^{CNIi5}.

Furthermore, designers who exhibit compound knowledge are what the design industry needs. This means that designers should not only handle basic design skills, but also know about design strategy, planning and marketing ^{CNIi5}. One of the primary attributes of a designer is passion for life as there remains a fundamental need to consider problems of customer viewpoint as well as adding their own innovative thinking to make design widely acceptable ^{CNIi4 and 10}.

To conclude, companies, like design management 'professionals', have their own successful experience and knowledge of design management including the 'hardware' and 'software'. They can engage with teams immediately, and make great improvements in the company's design operations. However, 'generalists',

normally concerned with the 'width ' but not 'depth', find it difficult to lead the team without professional skills in design, although they find it easier to adapt to the corporate environment ^{CNi9}. One of the greatest issues arising between the students and industry is the apparent mismatch between the knowledge learned in school and actual needs of the organisations ^{CNi5}.

11.2.2.5 Support from National Policy

Only 2 out of 10 interviewees offered comments on the enhancement of the support from the national policy as a key issue for design management implementation in both public and private sectors.

Due to the emergence of the new term of 'creative industry', it seems misleading in China, also extremely interesting, that the subject of 'animation' is the flagship of the creative industry. This has meant that most of the government's industry support fund missed the mainstream of creative industries; such as advertising- although the advertising industry is a major creative industry in China, it is not entitled to government incentives. This causes a lack of strong local brand-building and human resource constraints on the advertising industry. This causes the industry's output growth to become very slow ^{CNi5} meaning graduate placement in employment is limited in the advertising industry. On the contrary, the unchecked increase in university students in design-related courses has doubled the number of graduates ^{CNi5 and 8}.

The lack of support from the government also shows a lack of confidence in graduate employment. In turn, graduates need the support of relevant national policies, such as those to promote the industry and university admission requirements. In terms of the students themselves, there is great concern on enhancing their innovative behaviour and creative thinking; otherwise, they are practically nothing more than craftsmen ^{CNi8}.

11.2.3 The View of Key Issues of Pg DME (Q4-6)

As the results carried out from questions 4-6 pertain to the key issues of Pg DME, Table 4. 16 outlines the overview of emergent themes.

	Skills Development	Teaching and Learning in a Real Life Environment	To solve the Employment Challenge	To meet social needs
CNi1	•		•	•
CNi2	•		•	
CNi3		•	•	
CNi4		•		
CNi5	•		•	
CNi6	•			
CNi7			•	•
CNi8	•	•	•	•
CNi9				•
CNi10		•		

Table 4.16 Emergent Themes of the Key Issues Key Issues of Postgraduate Design Management Education (Pg DME) from CNI

11.2.3.1 Skills Development

5 out of 10 interviewees have emphasised the key issues for DME as being skills development.

'The first is the abilities to integrate into society' one interviewee thought^{CNi1}. Young people, in order to be accepted by society, must first achieve the standards expected by society. The abilities refer to: optimism, good communication skills, and being able to get along with others, as well as rapid integration capabilities, closely followed by peace of mind, which means not rushing to obtain returns, and seeking instant success. The third is excellent professional skills, such as design and market knowledge^{CNi1}.

One of the interviewees argued that *'I think as a design manager, she/he should be familiar with company culture, job responsibilities, as well as the ability to constantly adjust their sphere of knowledge according to the company's development'*^{CNIi2}.

Some concluded the skills needed to be developed by a graduate as: 1) Multiple knowledge under a complex structure. By definition a design manager is necessarily a design expert, but also exhibits a strong understanding of planning, production, marketing, engineering 2) innovative ideas 3) teamwork 4) perseverance and a powerful psychological ability^{CNIi5}.

However, design managers should be working with a broad knowledge base, such as advertising, media, marketing and consumer psychology. Schools should set up relevant courses, and be taught by experts - these are two crucial points. Nowadays, most schools lack teaching resources and this has significantly affected students' understanding of knowledge. In fact, the market does not lack professional graduates, but the best are highly sought after. Therefore, design management career experience is the key for most design managers^{CNIi6}.

11.2.3.2 To meet Social Needs

4 out of 10 interviewees have emphasised the key issues for DME as needing to meet social needs.

We are, after all, in business, and hope that design graduates take the shortest time possible to engage in design project work professionally. However, new graduates normally lack self-confidence in design, as well as social, market and other contact experiences. One of the interviewees thinks *'students can practise these aspects through ways such as placement; it will enable them to enter the social role more quickly'*^{CNIi7}.

In China, the curriculum, teaching hours and credits are basically determined prior to the course beginning. In some postgraduate study, there will be no change within one's study period (three years). However, in the rapidly changing social environment, the question of how to effectively integrate and reflect the needs of the society in teaching and learning is becoming more pressing. This requires strong school leadership and an understanding of change and professional support, as well as the needs of academics to promote its implementation. The teaching and learning content of design management has to meet the needs of today's society, but also the future development of design management knowledge to meet social demands. This is certainly beyond simply 'teaching' and 'learning' relations ^{CNI11}.

One of the most important requirements of business professionals is to adapt to market demand. The current vicious cycle of education and business is that: more and more students are finding it more and more difficult to find employment; at the same time the requirements graduates need to enter the market are increasingly demanding. In terms of design management students, they require 1) strong professional skills, and also 2) adaptability to the social environment at large as well as the smaller environment of the company; finally 3) their own positive personality, be good at team working, and also a fast learner ^{CNI19}.

11.2.3.3 To solve the Employment Challenge

6 out of 10 interviewees have emphasised the key issues for DME as being the challenge of unemployment.

Enterprises have a profit-oriented side. In this perspective, the teaching and learning of design management in higher education must adapt to meet social status and needs. This requires the practical ability to exercise the students; schools should provide students with the opportunity to practice. In addition,

the design of business knowledge is the key, which is inseparable from the market's attention and understanding of the needs of the enterprises ^{CNIi7}.

Firstly, as far as the demand side is concerned, one of the interviewees thinks *'deepening the industrial chain can effectively expand employment space. As for school, in terms of the direction and mode in personnel training, it should be focusing on the space and capacity of employment'* ^{CNIi1}. For example some courses aim to develop, communicate and demonstrate the potential value of design and branding. Preparing students from design and other creative disciplines to design innovative strategies is paramount. Design management features needed to find employment are closely linked to direction creative disciplines take.

Using 'teaching practice' ideas to solve the current employment problem may be considered. We also need to explore how to link the knowledge that students have learnt to reality. The scope of design definition is very broad and thus results in a lack of professional expertise in design students; one of the interviewees suggests *'should be further subdivided, to further integrate actual job requirements and school education'* ^{CNIi2}. Targeted courses could help solve the employment problems in organisations. This is not a fix for any particular enterprises or individual schools, but rather to build a communication platform to fill the gap between them ^{CNIi2}. Therefore, the key points are:

- The understanding of Pg DME and social needs of design management should be the same;
- Design management knowledge that students learn in school should correspond with the organisation's design management aspirations;

- Design Management students should strengthen the knowledge of social trends, to grasp design thinking and cultural influence ^{CNIi3}.

Design is part of the creative industries and innovation is at its core. Most graduates aiming to work in the design industry only have basic design skills. It hardly satisfies the needs of the community. Therefore, this has led to design students constantly competing for jobs; or choosing to continue their study at MA level ^{CNIi5}. This also shows a lack of confidence in graduate employment.

11.2.3.4 Teaching and Learning in a Real Life Environment

4 out of 10 interviewees have emphasised the key issues for DME as teaching and learning.

Design management philosophy and mode of programme operation is designed to implement ‘design’ as the central role in society. As far as education is concerned, it is important to determine how this effect is conveyed, so that more people understand and accept design management. There are still huge gaps between school education and the reality of today's society, but the proposal of the concept of Pg DME can promote the industry to think, and then hopefully reach a consensus ^{CNIi3}.

As to employment difficulties within the design industry, the key point is that universities do not understand real social needs, and the cooperation between schools and enterprises to cultivate innovation designers is definitely a positive step in the right direction ^{CNIi3}. Experience, design needs to tap people’s real needs ^{CNIi10}. Design management graduates need to have developed their design thinking, by helping to improve business ^{CNIi10}.

Schools and businesses develop a shared responsibility of design managers. A “learn when needed” approach is most important^{CNIi8}. Largely, business means profits, profits are promoted in the business environment or a specific business process. But the reality is that schools promote their own values, too. So the traditional sense of school education and business logistics are isolated, and design management professionals should try to break this pattern. Development should move from education to industry, in order to help companies develop design projects^{CNIi3}. Give students more opportunities to practice; such as company placements^{CNIi4}.

11.3 Summary of the Primary Data Collection both in Public and Private Sectors in China

This chapter has highlighted a number of pertinent themes that arose from the data set. By and large, findings reveal that the interviewees exhibited convergence of thought and opinion throughout the process and a detailed picture of current design management has been drawn from the public and private sectors in China (see Table 4. 17).

Themes highlighted in the interviews							
Q1	To meet social needs	To meet the demands of the market and customer/ user	Soft Skills	Multi Skills	Teaching and Learning in a Real Life Environment	-----	-----
Q2-3	To meet social needs	To meet the demands of the market and customer/ user	Soft Skills	Multi Skills	-----	-----	Support from the national policy
Q4-6	To meet social needs	-----	----	Skills Development	Teaching and Learning in a Real Life Environment	Solve the Employment Challenge	-----

Table 4.17 Summary of the Emergent Themes of the Collection of Primary Data both in Public and Private Sectors in China

From a detailed examination of the findings, the emergent themes from 3 parts of the questionnaire have been highlighted in Table 4.17 and emerged to be discussed in greater detail in Chapter 12. They are:

- Skills of design management required in the industries in China: 1) ‘T’ shaped design management talent; 2) “Innovative” and “creative” soft skills. The topics refer to the results of “skills development”, which includes ‘multi skills’ and ‘soft skills’ development of design management knowledge.
- Collaboration methods of design management required in the industries in China. This topic refers to the challenges of design management knowledge and education to meet social needs and the demands of the market and customer/user; as well as providing a method of teaching and learning in a real life environment.
- DM graduate employment requirements in the industries in China, which directly answers the interview result of employment challenge in China.

11.4 Chapter Summary

This chapter (Chapter 11) has set out to test ‘design management’ theory against industry needs through a collection of primary data both in the public and private sectors in China.

Along with the different stages of interviews in the 3rd phase of the comparative research study, it can be agreed that, from an academic perspective, design management has transformed into a recognised and valued discipline. However, complementing the reality, businesses and professional

organisations are increasingly championing design expertise as vital to strategic success.

This chapter has also highlighted a number of pertinent themes, which emerged from the data set, and these will be explored in greater detail in Chapter 12. An investigation will be further carried out in the next chapter (Chapter 12), on the mode of communication and cooperation between academic institutions and the industries, as the 3rd findings of the of 3-phased comparative research study. A framework will also be developed as part of the 3rd findings.

Chapter 12:
Comparative Analysis and Findings of In-depth Interviews
between the UK and China
(Third Findings and Discussions)

This is the last of three chapters presenting the research findings from the 3rd phase of the comparative research study.

The previous chapters in section 3 have explored the 1st and 2nd phases of the comparative research study, 2 sets of sub-findings have been reviewed both in Chapter 6 and Chapter 9 respectively. This chapter will present the findings from the research study of the in-depth interviews for both the UK and China (Chapter 10 and 11). A comparative content analysis approach is used to review the data. These are comparatively discussed through the identification of three sensitive areas of knowledge transfer: 1) Cultural Impacts; 2) Industry Needs; and 3) Teaching and Learning Strategies. It will also carry out an investigation into the mode of communication and cooperation between academic institutions and the industries.

The aims of this chapter are to:

- Discuss the findings of key issues of Pg DME from the viewpoints of leading academics both from the UK and China;
- Discuss the findings of key issues of design management development from the viewpoints of design managers from both the private and public sectors in China;
- Develop the findings of phase three of the comparative research study and also a framework at the operational level of Pg DMED in China.

In this chapter, findings will raise a number of questions stemming from overarching issues in the foregoing comparative study, which will be explored in Chapters 13 and 14. Table 5.2 Summarises these questions and signposts where they are carried out and discussed in Chapter 12.

Figure 4.21 outlines Chapter 12.

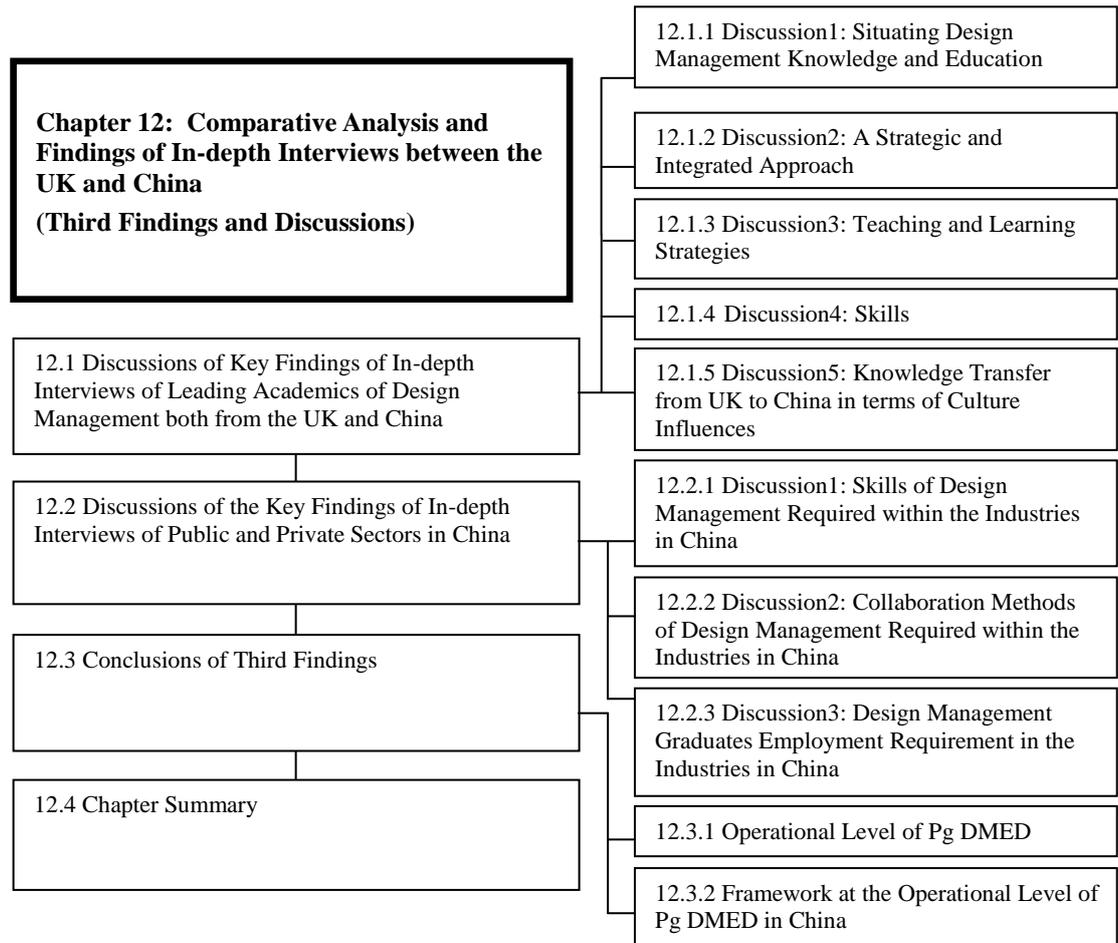


Figure 4.21 Chapter Map: Analysis and Findings of In-depth Interviews between the UK and China

12.1 Discussions of Key Findings of In-depth Interviews of Leading Academics of Design Management both from the UK and China

Having explored the data set in detail in 10.2 further passes revealed the emergence of four prominent routes of enquiry (see Table 4.12). Findings suggest that these subsets are inextricably linked. For example, without a clear indication of where design management lies and a strategic vision of where it is going, it is virtually impossible to decide on the makeup of the course of study and the skills needed in order to arrive. With recognition of this interdependent relationship in mind, the themes and their subsequent sub-themes will now be discussed, in connection with the specific findings of the interviews highlighted in 10.2, The desire for multi-skilled and cross-disciplined graduates.

12.1.1 Discussion 1: Situating Design Management Knowledge and Education (refer to 10.2.1; 10.2.2 and 10.2.4)

Design management must be aware of itself as a discipline and be able to situate itself in time and place in order to make value judgements on what sort of education it wishes to provide. However, this does not always appear to be the case. There remains uncertainty as to whether design management serves a business, management or design function, or a hybrid of the three and, as such, debate concerning which school it should rest in is ongoing. From a cursory glance at the comments from the interviewees, it becomes apparent that simply determining a ‘catch-all’ definition of design management is highly contentious, bound as it is by history and tradition and location within an institution. Perhaps the issue is further compounded by the fact that DM, as a discipline, has experienced great change, from its origins in the 1960s to the present day and has had to learn to adapt to the vagaries of fashion. Nevertheless, interviewees are unanimous in their belief that, irrespective of the ‘tag’ afforded to design management, there is a fundamental need to

operate strategically and develop an approach, which is able to operate across faculties and promote links across industries and cultures.

12.1.2 Discussion 2: A Strategic and Integrated Approach (refer to 10.2.1; 10.2.2 and 10.2.4)

Collaboration with industrial and institutional partnerships is now a ‘must’. HEIs and individual faculties / schools need to develop links and co-create with industry, across all sectors. This is in order to compete with other institutions and remain in a position to design curricula which are fit for purpose; thereby producing graduates with the necessary skills to operate in an ever more competitive market. Whilst interviewees suggest that the industry in question, whether in the public or private sector, is largely irrelevant, future design management graduates will be expected to have at their disposal a set of readily transferable skills. In order to put those skills into practice, there appears a widely held belief that awards must contain provision for a work placement or ‘live project’. Although the difference between the public and private sectors is becoming less marked, permitting the nurturing of perhaps more broad-based, generic skills, there remains a need to adapt to the changes in the market place and curricula may have to change to reflect this.

12.1.3 Discussion 3: Teaching and Learning Strategies (refer to 10.2.1; 10.2.2 and 10.2.3)

As curricula change to meet the needs of industry and student expectation, course design and classroom culture should mirror this adjustment, as synergy between what is expressed at strategic and operational level needs to be maintained. As such, students who undertake placements or ‘live projects’ must be provided with the necessary skills to engage and survive in a business setting. Students must be presented with a theoretical underpinning and a whole host of soft skills in order for them to operate successfully. This can

only be achieved through the development of modules and assessment, which encourage the nurturing of these skills, a practical approach to teaching via PBL and a classroom environment conducive to learning. PBL and assessments linked to reflection and CPD appear to be the way forward. However, in order to remain at the cutting edge of teaching and learning approaches and techniques, there is a need to encourage research in the field and to look at what other practitioners are saying and doing.

12.1.4 Discussion 4: Skills (refer to 10.2.3 and 10.2.4)

The issue of what and how to teach and which skills need to be honed is compounded by the fact that organisations are beginning to operate in an increasingly global environment. The generic soft skills of time management, working in groups and giving presentations, for example, are now joined by the need to provide graduates with an understanding of working across cultures. Furthermore, students must be taught to reflect and apply their knowledge and experience of the world to potentially more complicated situations and, perhaps, even learn to alter their beliefs and frames of reference. Graduates now not only need to operate nationally, but internationally and, skills development must reflect this. Whilst interviewees suggest that there was no one overarching definition of culture, students need to be aware that things may operate differently in various parts of the world where people work to diverse constraints. Nevertheless, the skills developed, if determined by industry and honed through placements and projects, should stand the students in good stead. By providing good supervision and support mechanisms and unthreatening teaching and learning environment, it is anticipated that students will learn to take risks with their learning and begin to reflect on where they are now and where they want to be.

12.1.5 Discussion 5: Knowledge Transfer from UK to China in terms of Culture Influences

The imperative for the UK to be an innovation leader requires design's creativity within a mix of science, business and the public sector. This suggests that the supply of design skills in the UK's workforce is linked to the country's capacity for innovation.

Generally the design approach the research concludes was confident, technologically competent and internationally focused. In China,

- The focus of design work was almost all on branding, styling and incremental product development rather than radical innovation, largely reflecting the types of client projects available.
- There was a strong sense of the link between design and human needs, acknowledging the spiritual and emotional responses to products and services. However, there was a greater emphasis on contemporary designers drawing on historical culture and representing it in new industrial contexts. China needs greater integration of globalisation that is not as reliant on Chinese culture to form their identity and draw more on an international common language.

12.2 Discussions of Key Findings of In-depth Interviews of Public and Private Sectors in China

Having explored the data set in detail in 11.2 further passes revealed the emergence of six prominent routes of enquiry (see Table 4.17). Findings suggest that these subsets are inextricably linked. The themes and their

subsequent sub-themes will now be discussed, in connection with the specific findings of the interviews highlighted in 11.2.

12.2.1 Discussion 1: Skills of Design Management Required within the Industries

A theme to be considered is the differences in industry structures and practices between China and the west and how design management supports local industry needs. The interviews of public and private sectors in China have suggested that although Chinese corporations have started to realise the value of design innovation, they often face the challenges of a malpractice nature. Specifically, three main problems need to be solved in the interior organisations in China: unifying design goals and commercial strategy; promoting a design management concept and strengthening innovation culture (Deng, 2009).

a, 'T' shaped Design Management Talent

From the interviews it can be suggested, the expectation of the industry in China requires novel approaches that combine different disciplinary views and knowledge bases and, even more importantly, provide students with practical experience in working as part of multidisciplinary teams in a real-life industry contexts (see 11.2.2, and 11.2.3). There is an expectation in both private and public sectors in the interviews that the design management graduates they recruit require a good understanding of business, if not real experience (e.g. 11.2.3.1 ^{CNIi5}), experts of design is needed with 1) multiple knowledge under a complex structure; 2) exhibit a strong understanding of planning, production, marketing, engineering; 3) innovative ideas; 4) the ability of teamwork; 5) perseverance and a powerful psychological ability ^{CNIi5}.

There was general agreement that designers need to be specialists in their disciplines but with some wider skills and knowledge – the ‘T’ shape idea discussed previously (see 9.1.1.2). There was a strong sense that an apprenticeship model (see 11.2.2.3; and 11.2.2.4), with new designers learning on the job, was part of career progression (see 11.2.2.1 ^{CNIi3}; and 11.2.2.3 ^{CNIi9}).

b, “Innovative” and “Creative” Soft Skills

Although Chinese industry has highlighted the many challenges it faces, it must have a clear understanding of the steps needed to become a design innovative leader, and view the changes as just another stage of China’s transformation.

Creativity is considered to be the most important attribute in both public and private sectors. In many ways design debates are similar to discussions in the UK – how can design be merged with best management practice? How can one overcome the disparity between DME provision and industry needs? From the answers from the interviewees, it can be concluded that: effective project development teams and organisational structures are prerequisites for innovation and creativity that are increasingly sought after in many companies. The more innovative the product/service and organisation are, the more creativity is required and there is a greater need for different kinds of expertise in the team (Madhavan and Grover, 1998). Innovative teams are made up of members who possess not only disciplinary expertise but also strong multidisciplinary knowledge and experiences.

During the interviews, companies typically used a discourse of ‘competence’ rather than skill. This reflects their over-riding concern with employee ‘performance,’ which seemed to bear little relationship to formal qualifications or levels of skills (see 11.2.2.3 ^{CNIi2,4 and 5}). Levels of qualification were important as a measure of ‘hard skills’ in identifying appropriate candidates,

but for virtually all jobs the primary focus was on behavioural competences (soft skills) including initiative, perseverance, time-management and team-working. In all ten interviews, interviewees did not view technical (hard) skills as a major problem. They are willing to provide training for those who needed to get up to speed with the latest technical developments. Their major concern was finding suitable people with the appropriate behavioural competences to ‘get the job done’ or ‘take the business forward’.

12.2.2 Discussion 2: Collaborative Methods of Design Management Required within the Industries

One of the findings of the interview is that, design management requires a strong, symbiotic relationship between industry and academia, with industry playing a vital role in having direct links with universities and influencing the skills and knowledge that students develop (see 11.2.3.4).

There was an acknowledgement that design graduates have yet to develop expected skills from the industry and ‘need to learn from more experienced designers’ (see 11.2.2.4 ^{CNI19}). Moreover, the need for professional development and continued training is recognised in Chinese industries. Some design consultancies interviewed, such as Suochi, provide training on topics such as management for designers. The company actively participates in international design management research and cooperation, introducing and developing solutions and practical models conforming to Chinese business and talent development.

At the same time, the design industry is growing rapidly with organisations such as the China Industrial Design Association and AIGA China emerging as support networks. The recent growth of these design industries and their presence on the international stage was evident in the number of awards won by the design consultancies and in-house departments in China. These awards

included Red Dot, IDEA, IF and other worldwide competitions and this recognition is – as in the UK design industry - very important to the designers and businesses involved (Design Council, 2010b).

12.2.3 Discussion 3: Design Management Graduates Employment Requirement in the Industries

Arguably, the reasons for graduates' employment problems in China are complicated. The increasing number of applications in HE has led to universities enrolling too many students and the financial crises triggered by the global economic recession are two of the most important. In terms of educating design managers, the most important point is how to manage design to meet social and industrial needs. This might be one of the most important solutions to solving the employment problem.

However, in China, new design management recruits are expected to understand about markets, business and users, and employers look for specialists who can work in multi-disciplinary teams. Using 'teaching practice' ideas to solve the current employment problem may be considered. It also needs to be explored how to link the knowledge that students have learnt to reality; as well as to further integrate actual job requirements and school education- in order to help solve the employment problem in the organisation.

Deepening the industrial chain can effectively expand employment space. As for school, in terms of the direction and mode in personnel training, it should be focusing on the space and capacity of employment. For example some courses aim to develop, communicate and demonstrate the potential value of design and branding. Preparing students from design and other creative disciplines to design innovative strategies is paramount. Design management features needed to find employment are closely linked to the direction creative disciplines take (see 11.2.3.3^{CNI1, 2}). However, it is not a fix for any particular

enterprises or individual schools, but rather to build a communication platform to fill the gap between them^{CNi2}.

In conclusion, after completing the interviews of ten advanced design career professionals, the current status of the design manager in China has been recognised. China advocates developing creative design industries under the strong direction of the government, and design management talent is urgently needed. However, it is contradictory that thousands of design related graduates are struggling to get a job in China. According to the survey, Chinese industry requires design management subject specialists. They require design managers with a strong creative foundation, and skills of design marketing, design communication, design research, and most importantly- business skills. These skills have to be integrated to meet the demands from Chinese society, industry needs and design managers own career planning potential. This study also suggests that Chinese organisations like to keep their knowledge implicit and are willing to share. Most importantly, trust in intra-personal relationships among employees can partly mitigate the impact of the Chinese cultural characteristics. However, at a macro organisational level there is still need to share tacit knowledge using explicit/formal knowledge management approaches.

12.3 Conclusions of Third Findings

12.3.1 Operational Level of Pg DMED

The operational level of DME is concerned with the implementation of design management pedagogy and teaching and learning strategies. Its goal is to achieve the objectives set by both strategic and tactical levels of DME. It can be made tangible by measuring the quality of operational DME outcomes. The operational level of DME includes the implication of the teaching and learning strategy, evaluation of teaching outcome. It deals with design leadership, and the cooperation with the management of communications. It is implemented to

achieve specific course teaching and learning objectives and manage the judgment of design proposals. It can also help to build quality through the consistent creation and implementation.

12.3.2 Framework at the Operational Level of Pg DMED in China

Multi-disciplinary approaches were present in the universities' leading academics who had been interviewed in China and included a wide range of specialists from design management related disciplines and business. This reflected the overall approach to design practice which is experienced in China— an understanding of the role of design in innovation, acceptance that it is on a par with the more traditional business specialists and belief that working together on design projects achieved the best results.

From the in-depth interviews from both public and private sectors in China, it can be seen that China has a strong understanding of product and a focus on the new product development of design, as well as its business context. It can also be observed that design management in China is based on the project management of design tasks rather than a multi-discipline affair geared towards the needs of industry. *'The use of structured design processes was evident in the projects designers were working on. The design research mostly uses analytical methods and generates quantitative data, although observational and ethnographic methods were also applied'* (Design Council, 2010b). In another instance, the interviewees shape a common understanding that Chinese design management terms should emphasise product design at the expense of more pervasive concepts. Whereas in the UK, the debate has moved on to encompass and explore more complex terms of design management; including such aspects as culture and sustainability.

Nevertheless, design management commentators are re-evaluating the design function within organisations and, although this has yet to permeate all levels

of culture and society; for example, design management at university level is still largely rooted in design schools, the re-appraisal of the discipline to include the wider aspects of culture is worth exploring.

In this chapter, therefore, a range of critical discussions has been carried out based on the two sets of interview data. Thus, the findings on the operational level of Pg DMED in China are:

- **Innovation:** Design needs to be understood to be an essential part of innovation and is used extensively by industry in China.

In essence, Chinese business leaders understand they need to develop the right innovation mix by integrating product and service, operational and business model innovation. This is vital for Chinese companies competing in a market that is ‘on the move’, where the basis of competition is shifting away from cost to delivering customer value (IBM Global Business Services, 2007). From the interviews it can be found that successful innovators will be those that can align their business and design strategy to support key business outcomes. *‘Some emerging China companies are able to exploit their lack of legacy systems to “leapfrog” their global peers in leveraging technology’* (Design Council, 2010b).

- **Collaboration:** the awareness of collaboration between industry and academia is well established, however, the forms of implication need to be established.

Leading Chinese companies are becoming more proactive in identifying areas of collaboration and partnership that are required to optimise and complement their internal resources, and are more selective in choosing the right partner in their industry ecosystem to derive maximum value

from collaboration (IBM, 2007). Collaboration between industry and academia is well established and provides mutual benefits in the form, for example, of funding and live projects for universities and new talent for businesses (see 8.1.3.2).

However, concerns often make it difficult for managers to detach from everyday priorities; this prevents reflection on the relevance and usefulness of a business's existing policy. As Gornick (2002) suggested, the *'key feature of academic/industry partnerships is the merging of boundaries between the theoretical and the practical, creating a new, middle ground of experimentation and investigation. Each party enters into the relationship as a learning exercise, making knowledge gains palatable to all concerned'*. Furthermore, even though the awareness of collaboration between industry and academia is well established in China, the forms of implication need to be established. These include accessing a huge knowledge network and the reflective space afforded by academic thought—support that is difficult to gain access to, at least in such a collaborative form, in any other way.

- **National culture:** influence on the management culture of design.

The rich heritage of craft and culture has a strong influence on contemporary design, and emotional human needs are also recognised. At the same time, leading Chinese companies are working to strengthen the key innovation enablers in order to execute their innovation objectives successfully. The future of innovation implementations of Chinese industries is to establish a culture and talent pool through the strong commitment and personal attention of top leadership teams, supported by appropriate management processes and incentive systems.

- **Management culture:** Implementation of “design” and “management”- support from exclusive management boards in the organisations.

Organisations in China should link the deployment of design to innovation and product development – at an early stage and structurally – their design efforts cease to only focus on the product /services and take a broader approach that includes the process (Heany, 1983 in: Von Stamm, 2005). This requires the company to synthesise an array of different factors. Companies with such an approach to design management will have a dedicated employee or department with formal responsibility for the management of the total design process within the organisation.

The design manager will have to act as an interface between different kinds of design specialists, departments and company management. In order to accommodate shortening product cycles, design is used proactively, and product development becomes a permanent feature. One critical success factor is time-to-market; project turnaround from the initial idea to product launch. Process quality is an important factor to ensure a company keeps up with the competition.

Therefore, it comes to the conclusion that exclusive management board support from the enterprises is essential to encouraging the implementation of knowledge of ‘design’ and ‘management’.

- **Teaching and learning culture:** ‘Chinese’ stereotype?

The research findings would appear to raise some important issues in the debate regarding Chinese students and their supposed inability to engage in a UK design management learning style. At first glance, it

would be difficult to argue that cultural attributes should not be used as a convenient explanation learning styles. Any perceived difficulties Chinese students may exhibit are more likely to be a direct consequence of a lack of unfamiliarity with teaching methodology. On the one hand, there are students who quite clearly respond to more communicative ways of teaching and prefer it to what they have been used to in their own environment.

Given appropriate conditions, apparent cultural dispositions towards a certain approach to learning appear quite flexible, despite the beliefs of certain commentators (Wong, 2004; Hu, 2002). The findings further suggest that it is misleading to homogenise cultures of learning and hazardous to characterise highly individual groups of learners by 'reductionist' categories. The existence of perceived cultural differences in certain aspects of life is not denied but attributing certain Chinese learners' reticence, passivity, deference and obedience to cultural characteristics not only appears groundless but detrimental to the undertaking of such cross-cultural studies.

12.4 Chapter Summary

After completing the overall analysis of the data contents and discussions of the findings, the framework at operational level of Pg DMED in China has been abstracted; and essential aspects of design management, and the expected qualities of DME implantation have been embedded. The results are tabulated as the study's major findings for further discussion.

In this chapter (Chapter 12), data have been identified into discernable patterns from the 3rd phase of the comparative research study. The major 3rd sub-findings can be described as (see Figure 4.22):

The implementation of Pg DME is to 1) Promote the awareness of design innovation and use it extensively for both private and public sectors in China; 2) Establish collaborations, as well as the forms of implication between industry and academia.

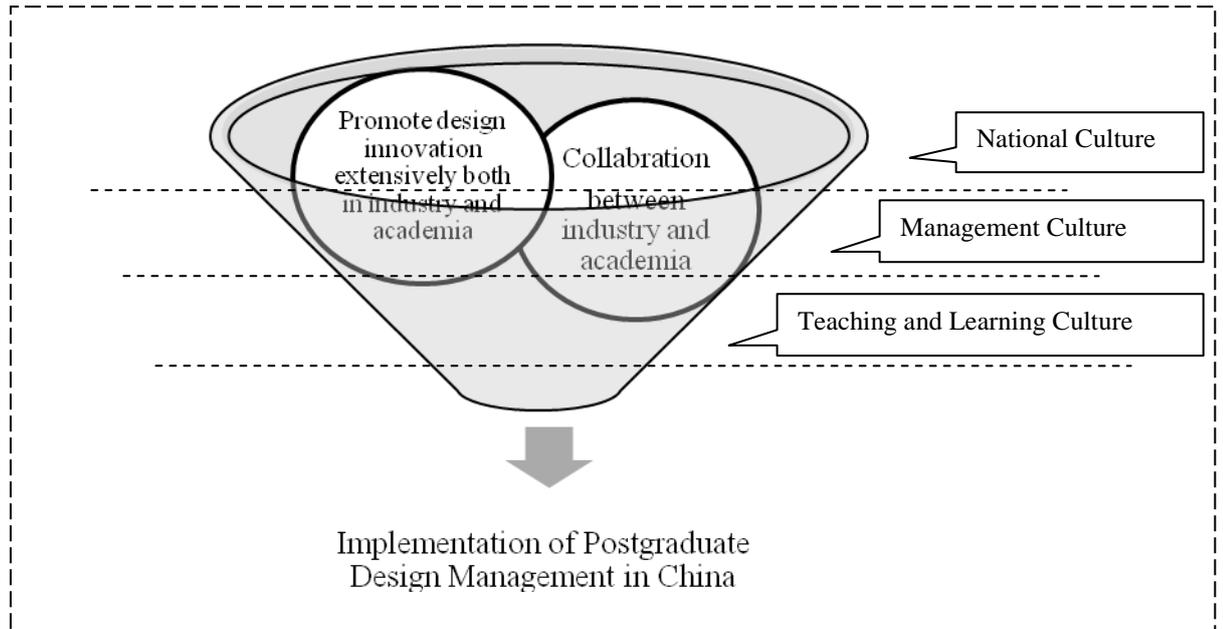


Figure 4.22 Postgraduate Design Management Education (Pg DME) Implementation in China

Culture is a very complex and “nested” phenomenon (Swindler, 1986). There are cultural layers such as national culture, organisational or business culture, and professional culture, all of which may jointly affect an individual’s behaviour in a specific context (Möller 2002; Almeida et al., 1998; Bhagat et al., 2002; Delong and Fahey 2000). Therefore, DMKT between industry and academia is not a fix for any particular way, but rather to build a communication platform to fill the gap between both industries and universities. Through this process, it is affected by cultural issues at three different levels: 1) National culture; 2) Management culture; and 3) Teaching and learning culture.

Following is the summary of section four. It will further illustrate the establishment of the empirical comparative study of this research project.

Summary of Section Four

Section four has presented the comparative study of this research project. The project was devised as a 3-phased investigation and 3 sub-findings have been summarised.

In the 1st phase of the comparative research study (Chapter 6), a comparative research study has been conducted to analyse the environment of DMED on multiple levels, including cultural, governmental and industrial both in the UK and China. The 1st findings of the research study have been generalised and a framework at the strategic level of Pg DMED in China has been developed as a major part of the 1st findings.

In the 2nd phase of the comparative research study (Chapter 7, 8 and 9), current comparative research to identify the current models of Pg DME through secondary sources both in the UK and China has been conducted. The 2nd findings have been generalised and a framework at the tactical level of Pg DMED in China developed.

In the 3rd phase of the comparative research study (Chapter 10, 11 and 12), an investigation of best practice in Pg DME systems through the in-depth interviews of leading academic individuals selected both in the UK and China has been undertaken. The results have been tested against Chinese needs through a collection of primary data both in public and private sectors in China. Finally, the 3rd findings have been generalised and a framework at the operational level of Pg DMED in China developed as a major part of 3rd findings.

What follows will be the study of a comparative analysis of the three sub-findings from the 3-phased comparative research study (see Figure 4.1). The results will be discussed and used to inform the final findings of the research study, the implications will be assessed in order to answer the research questions of the research thesis.

**Section Five:
Main Findings; Discussions & Recommendations; and
Conclusions
Chapters 13, 14**

Introduction

This section includes two chapters. The chapters and aims of this section are:

Chapter 13: Main Findings, Discussions and Recommendations;

- To conduct a comparative study of the three sub-findings from the three phased comparative research study in the previous section;
- To outline recommendations, evaluate and discuss new developments and their implications; and
- To conduct the final findings of the research study.

Chapter 14: Conclusions

- To provide an overview of the aims objectives, research questions;
- To present the major findings of this research study;
- To discuss the research contribution and limitations of the study; and
- To establish the recommendations for future research.

Figure 5.1 outlines section five: Main Findings, Discussions and Recommendations, and Conclusions.

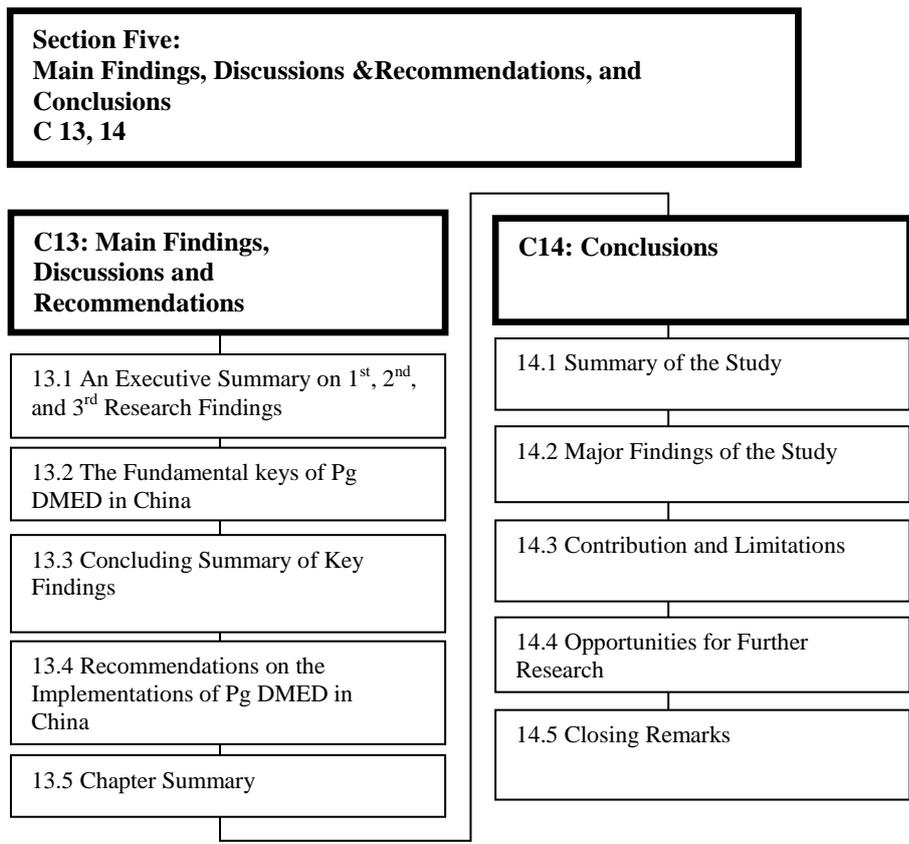


Figure 5.1 Section Map: Main Findings, Discussions & Recommendations, and Conclusions

Chapter 13:

Main Findings, Discussions and Recommendations

In this chapter, the 3-phased findings will be summarised, critically analysed, and the common themes will be filtered through the discussions across three different levels of Pg DMED in China, in order to reference the main findings of the study. Thereafter, a conclusive summary of key findings will be developed. Finally, subsequent recommendations will also be evaluated in respect to aspects of Chinese Pg DMED. Therefore, the aims of this chapter are to:

- Establish a comparative analysis of the three sub-findings from the 3-phased comparative research study;
- Develop a conclusive summary of key findings to inform the research questions of the research study;
- Evaluate and discuss recommendations in respect to Chinese Pg DMED at: 1) strategic level; 2) tactical level; and 3) operational level.

Figure 5.2 outlines Chapter 13: main findings; discussions and recommendations.

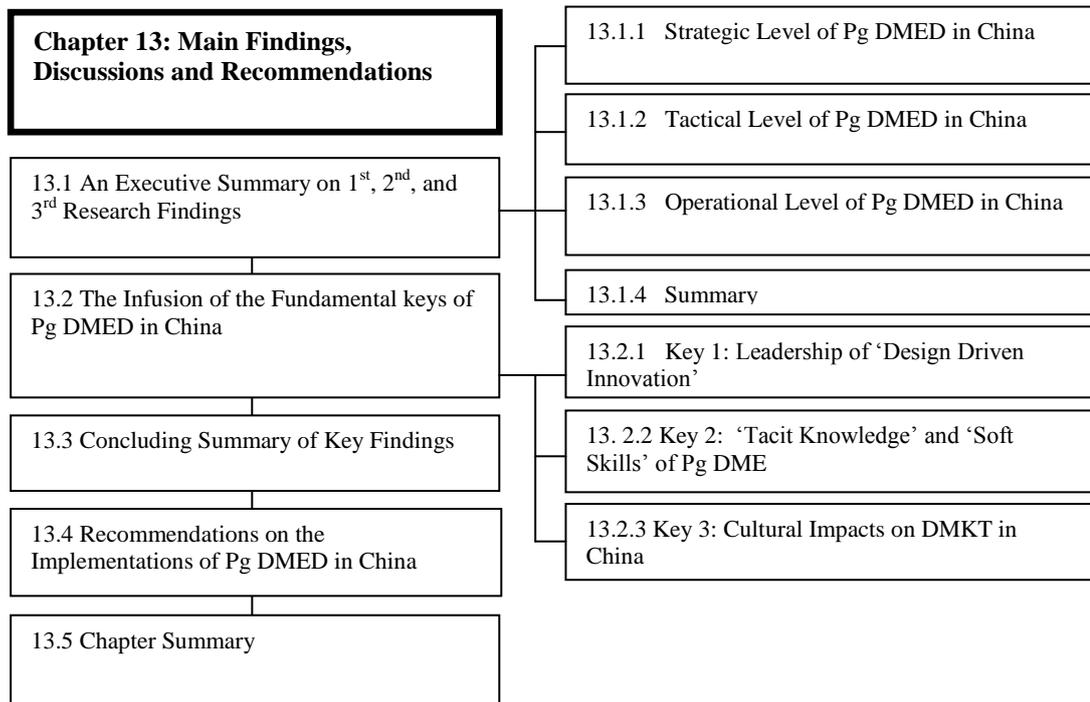


Figure 5.2 Chapter Map: Main Findings; Discussions and Recommendations

13.1 An Executive Summary on 1st, 2nd, and 3rd Research Findings: Develop the Framework of Pg DME in China

As this research study constructs an investigation into postgraduate design management knowledge; educational curriculum; and teaching and learning strategies in the UK and reports on how it applies to the Chinese context, the comparative research has mainly focused on three phases: 1) Comparison of DME related policy between the UK and China; 2) Identification of current models of Pg DME both in the UK and China; 3) Investigation of best practice in Pg DME system through in-depth interviews.

As a result, the 3-phased comparative research study carried out three exclusive findings which have led to the development of frameworks for Pg DMED in China, at: 1) Strategic Level; 2) Tactical Level; and 3) Operational Level.

In order to inform the content of Pg DME in China, all 3 sub-findings have been grouped into three domains, namely 1) Chinese postgraduate design management knowledge, 2) curriculum and 3) teaching & learning strategies. This was to allow for the establishment of a flexible structure to facilitate and re-assemble the necessary resources to meet existing requirements from the economic environment, government policy and industry needs.

13.1.1 Strategic Level of Pg DMED in China (refer to 6.7)

1st findings have drawn upon the results of analysis from DME related policy study both in the UK and China. The significant factor found at the strategic level of Pg DMED is that it should aim to support and strengthen the national/international vision, by creating design management leadership (refer to 6.7.1). The Chinese government needs to be able to deploy relevant policies to intervene in the ‘supply-and-demand system’ to balance design management education. This system should be influenced by government, the HE system, both private and public sectors and students themselves (see Figure 4.4).

Moreover, the fundamental actions of strategic, long-term vision and planning for Pg DMED in China were drawn into the following points (refer to 6.7.2):

- To develop design management knowledge; a healthy education and business environment regulated by the government is crucial. Among the policy-making priorities would be regulating engagement in the design management curriculum, building leadership to champion design’s role in innovation, and

developing a regulatory and legislative system for design management in China.

- To enhance the policy implications of supporting innovation and entrepreneurship by producing ‘highly skilled design management professionals’ through education and training policies, in order to sustain a shift toward more value-added activities that might remain within the economy in China.
- To develop organisational models of collaboration in design management. This requires the collaboration between technology, business, industrial design and design education and other related private and public sectors.
- To transform the Chinese system of HE from within to ensure consistency with high level quality standards. Stressing quality is the core. As China’s economy continues to grow at an extraordinary rate, with ever evolving business practices, more research is needed to document and provide guidance for successful transition.

13.1.2 Tactical Level of Pg DMED in China (refer to 9.3)

From the development of a current model of core curriculum content in existing Pg DME courses both in the UK and China, 2nd findings have provided central information on the development of a framework for Pg DME curricula in China; as well as a generic framework from which HEIs are able to customise their own provision, in light of their specific situations.

A significant factor discovered in the 2nd findings is that the tactical level of DMED should address how design management study is organised within HEIs (refer to 9.3.1). This includes a structure for design curriculum, and also bridges the gap between the long-term objectives of DME and the implementation of design management teaching and learning. The activities at this level of DME development should entail curriculum design, design management skills development and competencies. Furthermore, it should also include managing teaching and learning systems and procedures, and developing innovative study concepts and finding new knowledge opportunities of design management. Most importantly, outcomes of these education activities should build design management resources and competencies for implementation in society and industry.

Another significant factor emerging from the 2nd findings (refer to 9.3.2) is that Pg DME in China should not only include a theoretical subject knowledge framework, but also introduce a practical bent through flexible teaching methods by collaborating with real life businesses. Thus, the essential elements of Pg DME in China have been summarised below:

- Festervand and Lumpkin (2005) suggested that *'course /programme delivery will become increasingly multidimensional, and curriculum content will be subject to greater specificity and perpetual redesign.'* A multi-disciplinary approach is seen as a guarantee for successful innovation. Industry collaboration and PBL are essential, particularly concerning design management and innovation in multidisciplinary and international contexts in China.
- Lombardi (2007) and Turner (2004) maintained that designers need to be seen as design professionals, if they are to be respected in the field. However, knowledge of human dynamics and of basic business practices are also needed to provide comprehensive

projects to update soft skills and enhance designer-focused information and knowledge are equally important in Chinese Pg DMED.

- Spence (1973) argued that an important function of education is to provide a job-market signal. McBride (2007) suggested as a discipline, design management has nested within management science, and emphasised the influence of the ‘new economy’. Thus, Chinese Pg DME must establish a flexible course structure to facilitate and re-assemble the necessary resources to meet existing requirements from the economic environment, government policy and industry needs. This not only includes a theoretical subject knowledge framework, but also aims to introduce a practical bent through flexible teaching methods by collaborating with real life businesses (such as MBA/CPD format).
- Greater emphasis also needs to be placed on the pursuit of quality and standards in Chinese Pg DME. Thus, there is call for a shift in focus from one of quantitative expansion to one of emphasis on quality curricula, teaching and learning. Standards such as BS7000 should be exploited to support the design of manufactured products, services, construction projects, for planning obsolescence in all stages of the life of products, and for managing inclusive design (Hollins, 2008). Therefore, in the development of Chinese Pg DME, universal quality and standard procedures are needed in all aspects of provision for further improvement to take place.
- A tough challenge that needs to be met head on relates to cultural aspects of Chinese learning styles (see 4.4.2). It is interesting to speculate how Chinese teachers and learners might adapt to a PBL environment, if it is possible to deliver the totality of a design

management curriculum using more directive methods. The assumption is that the nature of the cultures involved in the network and the type of network both influence the barriers faced in knowledge sharing.

13.1.3 Operational Level of Pg DMED in China (refer to 12.3)

The 3rd findings were gleaned from the reflection on data from the 1st and 2nd research findings; as well as a set of open-ended, in-depth interviews undertaken with the key players in Pg DME both within the UK and China. These were set out to test ‘design management’ theory against industry needs through a collection of primary data both in the public and private sectors in China. It further provided a model of the communication and cooperation between academic institutions and the industries in design management in China.

A significant factor found in the 3rd findings is that: operational level of DMED should be concerned with the implementation of design management pedagogy and teaching and learning strategies; it also should achieve the objectives set by both strategic and tactical levels of DME; furthermore, it should be made tangible by measuring the quality of operational DME outcomes (refer to 12.3.1).

The 3rd findings highlight that the implementation of Pg DME in China (refer to 12.3.2) should be based on:

- Innovation: Design needs to be understood to be an essential part of innovation and is used extensively by industry in China. From the interviews it can be found that successful innovators will be those that can align their business and design strategy to support key business outcomes. *‘Some emerging China*

companies are able to exploit their lack of legacy systems to “leapfrog” their global peers in leveraging technology’ (Design Council, 2010b).

- Collaboration: Establish the collaboration, as well as the forms of implication between industry and academia in order to access a huge knowledge network and the reflective space afforded by academic thought.
- Moreover, design leadership should be concerned about the cooperation with management communications. Bennett (2004: 3) suggests that *‘there are certain cultural predispositions, which hinder / promote engagement with a particular learning environment’*. Therefore, through this process, the affects of cultural issues are reflected in three different forms: 1) National culture; 2) Management culture; and 3) Teaching and learning culture.

13.1.4 Summary

From the overview of the three sub-findings, the key stages of promoting design management knowledge, curricula, teaching and learning strategies in China can be divided into three distinctive levels. Figure 5.3 presents an overview of guidance and support in design management knowledge in China. This figure also provides the key contents of the 3-phased comparative research study findings.

However, from the research findings outcomes, it is also apparent that before this 3-stages design management development process can be realised, there are three elements which need to be formally realised, which act as the ‘thread’

to put a Chinese postgraduate design management framework into place. They can be described as:

- Leadership of ‘Design Driven Innovation’;
- Tacit knowledge and ‘soft skills’ of Pg DME; and
- Impact of Culture on DMKT.

In the next section (13.2), the three keys will be detailed and discussed.

13.2 The Infusion of the Fundamental Keys of Pg DMED in China

13.2.1 Key 1: Leadership of ‘Design Driven Innovation’ (refer to 2.3.2; 3.3; 6.7; 9.2.3; and 12.3.2)

This section refers to the first fundamental key of Pg DMED in China.

From the 3-phased research study it can be concluded that the discipline of design management in China should be based on a "cultural form". Furthermore, design management should play an important role in a diversified social and business culture. Managing design should also be considered an important strategic tool leading to business success. In short, design management could be described as ‘design-minded leadership’.

However, as Goleman (1996) suggested in *‘managing with heart’ that ‘leadership is not domination, but the art of persuading people to work towards a common goal’*. Topalian and Turner suggested that core factors of design leadership involve five aspects: clarification, definition, demonstration, development and realisation (Topalian and Turner, 2002; Hands, 2009). The findings of this study support that concept that ‘innovation’ plays a key strategic role in bridging the perceived gap between design and business; as well as the transformation from domination to persuasion. Thus, it promotes

leadership of design beyond the aesthetic to change experience, organisations, and opportunities.

Innovation is viewed as a key building block for China's future in both the public and private sector. The quest for innovation is on the agenda at the highest levels of government, and all companies in China have been asked to contribute to the effort (National Bureau of Statistics, China, 2005; MLP 2006-2020; McGregor, 2009). One of the study's findings was that the innovation capacity of Chinese design management is dynamically linked to skills supply in two ways.

Firstly, research highlights innovation in the form of new technologies, new industries and new services, which the Chinese government has put enormous effort into. For example, the MLP describes itself as the "*grand blueprint of science and technology development*" to bring about the "*great renaissance of the Chinese nation*". This could be classified as what people might traditionally think of as technology-based innovation. However, as far as this study is concerned, in terms of design management development in china, the weakness appears to be the second way of innovation--- the innovation of process and systems.

In contrast to technologies, this second type of innovation can be described as 'design driven' innovation (Verganti, 2003). This is associated with functions Verganti defines as 'design driven innovation'; as '*an innovation where novelty of message and design language is significant and prevalent compared to novelty of functionality and technology*' (Tether, 2005:9). The Cox Review (2005) discussed the needs for creativity, innovation and design under the context of a global economy. Cox believes '*Design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a*

specific end.' In other words, design drives innovation as a competitive advantage.

As a result, in order to encourage 'design driven innovation' of process and systems in China, its three levels of development must be present.

Firstly, at government level, a "national design innovation system" must be constructed in China. In particular, the application of knowledge systems and development needs great improvement. As in the 1st findings of the study, it suggested that the application of knowledge of design still takes the form of "imitation", and only sees a "technological" role rather the design of "integrated innovation" effect (see 6.6 for reference).

Secondly, it requires the awareness to foster future design managers in the business, with an understanding of global civilisation, and uniqueness of native culture - reflecting the importance of embedding innovate capabilities. In this case, innovation rarely depends on the skills of individuals, companies or universities working in isolation, but instead on a culture of mutual collaboration and purpose. For example, industries should be increasingly building capacity for high end activities including design research, business training, and product development, emerging design management with higher institutions. Design needs to be understood as an essential part of innovation and is used extensively by industry in China and 'convergence' should be used as an important term in industries (see 9.2.3 for reference).

Thirdly, 'design driven innovation' demands design management graduates and design managers to be trained in multiple ways. As industries change and converge, traditional education systems in China are no longer supplying industry with people who have an appropriate and useful mix of skills and experience. But a supply of differently skilled design teams drives innovation - as *'While there is no one mix of skills that can guarantee innovative*

performance in all circumstances, broadening the mix of skills within teams and individuals is one way to help innovation happen’ (HEFCE, 2010:13) (see 12.2.1 for reference).

To conclude, leadership of ‘design driven innovation’ related skills that are increasingly valued by both private and public sectors include *‘creativity, flexibility and adaptability, communication and negotiation skills, and management and leadership skills that can be deployed within teams and projects as well as within organisations*’ (Tether, Consoli and Gagliardi, 2005). However, the caution that arises with ‘design driven innovation’ is to protect against imitation, as they may have been developed from established technologies.

13.2.2 Key 2: ‘Tacit Knowledge’ and ‘Soft Skills’ of Pg DME (refer to 2.1; 2.2; 9.2.2; 9.3; 12.1.4; 12.2.2; and 12.2.3)

This section refers to the second fundamental key of Pg DMED in China.

From the 3-phased study it could be argued that, it is essential to review the debates about curriculum design in Pg DME in China, by considering the diversity of provision which is possible under the design management banner. A factor, which for some exposes its weaknesses as a professional qualification, on the other hand embraces a richness of approach and outcome (Ashton and Deng, 2006). Tacit knowledge of DME, as a result, plays an important role in realising ‘design management’ knowledge into real life.

Tacit knowledge is ‘sticky’, and difficult to codify and transfer (Nelson and Winter 1982). Tacit knowledge exists either in the heads of individuals or a collective body and has been acquired through experience and repetitive actions (Kostova, 1996). Another fundamental concept is that knowledge is either viewed primarily from a functionalist perspective, or recognised from inherent ambiguity, as emphasised by Alvesson (2001). The research findings

suggested that tacit knowledge of design management is an understanding, application, and sympathy of the environment of the world at large; often classified as higher level skills (see Chapter 12 for reference). This tacit knowledge is often taught through application and reflection, which actually makes the tacit knowledge of design management visible, and through this process, enables it to be verbalised and interpreted. However, postgraduate study in design management emphasises the skills with a more tacit nature, whereas undergraduate skills are based on the more tangible areas of design management; such as making and doing (see Chapter 12).

The issue of creativity is equally important as a driving factor of change in DME in China. Creativity can be seen as the part of innovative behaviour that is most evident in the first phase of the innovation process, where problems or performance gaps are recognised and ideas are generated in response to a perceived need for innovation (West, 2002). The Cox Review (2005) defines creativity as: *'the generation of new ideas – either new ways of looking at existing problems, or of seeing new opportunities, perhaps by exploiting emerging technologies or changes in markets'*. The review also defines innovation as *'the successful exploitation of new ideas. It is the process that carries them through to new products, new services, and new ways of running the business or even new ways of doing businesses'*.

Some schools that prepare students for stylistic and formal expression, such as 'Creative Thinking', run a module in MA design management study SUAD (see Appendix 1-7). However, it addresses only a small part of the discipline of design management. A more important approach in postgraduate design management study is to integrate 'Creative Thinking' with the ability to conduct user research, task analysis, and a variety of other activities suited to the business environment. For example, creativity is stimulated when the substance of a service or product, whether communication or industrial, is part of the environment of design thinking.

Thus, creativity as a form of tacit knowledge of design management is a complex subject with diverse theories and practices that Chinese universities need to explore. However, there are two distinctive findings from UK postgraduate design management teaching and learning that may be appropriate for Chinese study.

Firstly, creativity in most design management courses is nurtured and taught through application and reflection. Cultivating creativities has been encouraged as an application among design management students not through the imitation of work but through the acquisition of design management skills and, most important, through encounters with the problems faced in real life projects (see Appendix 1-4). Instead of repetition being necessary to develop design management skills, this study's findings have found that the creative energy of students is enhanced by encountering real problems and real difficulties. This comes under the umbrella "creative problem solving," and encourages student confidence in seeking and expressing a solution. Over time, with real experience in the industries and ongoing discussion with tutors, many students gradually focus their own efforts in creative ways concerning design management thinking (see Appendix 1-7).

The fact that it is hard work to acquire fundamental design management knowledge and skills will come as no surprise to Chinese students due to the social and educational background (see 4.4 for reference). It is clear that tacit knowledge without the fundamental theory of design management is depowered for the design management professions in real life. However, exercises in problem based learning in real life situations in developing design management skills seem to indicate the way forward for Chinese DMED.

Secondly, a conclusion drawn on the findings at different levels of postgraduate design management development is that creativity in design management is focused on multi-skilled development (see Chapter 9 and 12).

The realisation of tacit knowledge in real life ‘design management’ implementation is based on the recognition of ‘soft skills’ in the design process and management (see 9.2.3.1 and 12.2.1 for reference). Indeed, the success of services /products is often based on the ability of a team of designers to work together in developing a new idea.

For example, ‘globalisation’ has forced most organisations to understand that ‘where to think’ is more than a question of finding the cheapest locations. It reflects other considerations such as the need for a critical mass of people who understand the organisation or share the collective intelligence necessary for advanced research and development. As a result, a growing appreciation of the fact that global design managers require certain ‘soft skills’ is requisite.

Cooper and Press (1995) argue that being a design manager is about ‘*the response of individuals to the needs of their business and contribution they can make to enable design to be used effectively*’. Jerrard and Hands (2002) suggest that effective design management involves good communications between different organisational departments. Topalian (1980a) criticised the Corfield report which started that ‘*having designers on company boards may well be step in the right direction; however, the design professions should concentrate instead on a more sensible approach*’. He suggests that designers and managers are better at their respective roles whilst increasing the sensitivity and understanding between them. The consideration of ‘soft skills’ engagement in current postgraduate design management study is now considered essential to development. Soft skills in design management include communicating, listening and engaging with people.

However, there are other soft skills more objective in nature, such as cultural sensitivity, the awareness of local customs, and fluency in a second or third language, which have led to an interesting philosophical division among subjects. Briggs (in Green, Briggs and Lombardi, 1998) also suggests that a

competent design manager must have good communication skills, both written and verbal. Furthermore, teamwork and the ability to think strategically are very important. She commented that *'Where they are necessary is in understanding the design process and functioning as a translator or facilitator between both camps, not only demonstrate their design "thinking" skills, but managing creative processes well'* (Green, Briggs and Lombardi, 1998:19). Furthermore, providing courses that cover these 'soft skills' usually comes at the expense of traditional, and often more rigorous subjects, and a divide now exists on whether to place emphasis in the curriculum on the issue of doing business in an increasingly networked global village or to eschew that in favour of traditional rigor (Ashton and Deng, 2006).

These findings have particular relevance to Chinese DME, where form giving is based on the skill of education. In short, it needs a more strategic and all-encompassing view of creativity than the mere ability to represent what already exists. This seems to suggest that teaching and learning strategies of Chinese postgraduate design management courses are not currently providing an environment conducive to learning. Lucas (2006: 270) suggested: *'Successful knowledge transfer cannot occur, unless we have the abilities to recognise these opportunities and to adapt what is being transferred to the new environmental conditions while ensuring that they are institutionalised'*.

13.2.3 Key 3: Cultural Impacts on DMKT in China: On the dimensions of social culture, management culture, and teaching & learning culture (refer to 2.3; 3.4; 4.4; 6.6; 6.7; 9.2; 10.2; and 12.2.1)

This section refers to the third fundamental key of Pg DMED in China.

'Cultural differences may create bottlenecks that either impede or eliminate the potential for successful knowledge transfer' (Lucas, 2006:271). The quality of relationships between provider and receiver has major implications for

knowledge transfer. From the findings provided from the research study, it can be seen, in terms of DMKT, that consideration rests on which dimension of the cultural impact it falls under:

First, is the social dimension of the cultural impact on DMKT in China. Society plays an important role in developing and advancing knowledge. A social environment which encourages design management knowledge is desirable in China, in which a social context promotes education and learning and appreciates creativity.

Moreover, an economy that invests in culture and culture-based knowledge transfer is needed (see 6.7.2 for reference). In terms of creating a culture of design management knowledge in China, on the social scheme, the evidence in this research study suggests that major economic, political, and industrial events have a fundamental influence over DME and its policy making (see 6.6 for reference). TLRP's evidence-informed principles for effective pedagogies are explained as (TLRP, 2010:14): *'Effective pedagogy demands consistent policy frameworks, with support for learning for diverse students as their main focus. Policies at government, system, institutional and organisational level need to recognise the fundamental importance of learning for individual, team, organisational, institutional, national and system success. Policies should be designed to create effective and equitable learning environments for all students to benefit socially and economically'*

Therefore, national context can support and stimulate the development of a successful design management subject environment. However, being aware of the national context is equally crucial when designing Pg DME programmes.

Second, in terms of the organisational level of cultural impact on design management development, *engaging in knowledge transfer is a risky venture and some degree of confidence must exist between the parties to "do the right*

thing” (Lucas, 2006:271). Hence, the organisation may be forced to devote significant scarce resources to actively managing the process.

Alternatively, much design activity is concerned with the provision of a professional service, either to a client or to an employer. Industry organisations would feel reassured that the professionals understand their problems and are highly competent and experienced in design practice. Thus, the findings from the research study have suggested that, specifically, in terms of design management, three main problems need to be resolved within organisations in China. Ways have been discovered in this research study such as: unifying design goals and commercial strategy; promoting a design management concept and strengthening innovation culture (Deng, 2009) (also see 12.2.1 for reference).

Thirdly, is the impact of university culture on design management development. A fundamental external factor that influences knowledge is education and learning which, in turn, play a significant role developing the environment of design management. Culture has the capacity to stimulate students’ innovation and creativity in the teaching and learning of DME. Sir George Cox, stated in *The Cox Review of Creativity in Business (2005)*: *‘Giving every student likely to work in, or with, business a wider understanding would be a great step forward. However, I believe that there is an opportunity for some universities to go further, running masters programmes that bring together the different elements of creativity, technology and business.’*

However, as a result in the findings, university culture can be considered in two ways. On the institution side, for example schools, universities and further education providers, reflective and experimental learning cultures need to be considered as important characteristics of progressive Pg DME in China (see 9.2.5 and 10.2 for reference). On the students’ side, learning culture is about fostering *‘flexibility, openness for the new, the ability to adapt or to see new*

ways of doings things and the courage to face the real life situation.' (Cropley, 2001). Thus, a design management culture moving towards a flexible university model for multilevel delivery is the way forward for Chinese Pg DME (see Figure 4.14 and Figure 4.18 for reference).

13.3 Concluding Summary of Key Findings

The last two sections (13.1 and 13.2) of this chapter established 1) a comparative analysis of the 3 sub-findings from the 3-phased comparative research study. A summary of key findings is formed; and 2) an implementation of the findings; which are thoroughly discussed with reference to the following aspects, which are applicable to this thesis:

- Design leadership of 'design driven innovation';
- 'Tacit knowledge' and 'soft skills'; and
- Cultural impact on knowledge transfer under the dimensions of 'social culture', 'organisational culture', and 'teaching & learning culture'.

Therefore, to summarise the key findings of this entire research study, a comprehensive diagram has been created, namely: **'The Knowledge, Curricula, Teaching and Learning Strategies of Postgraduate Design Management Education (Pg DME) in China'**. See Figure 5.3 for details.

Firstly, the diagram (Figure 5.3) illustrates the 3-phased findings of the comparative research study of the research. It provides an overview of the three sub-findings, the key stages of promoting design management knowledge, curricula, teaching and learning strategies in China can be divided into three distinctive levels. This part of diagram is described as a 'fertilisation' of Pg DME in China. The mode provided at each level has defined the essential framework for a healthy development of Pg DME in

China. Moreover, the three levels of development are related affect each other as a holistic process. In other words, the ‘fertilisation’ presented is the framework of content and process of Pg DME in China. The essential summary findings of the three levels are:

- **At Strategic Level:** Promoting design leadership; Managing design in strengthening national cultural impacts on innovation; Ensuring it is developed to meet economic, government, HEIs and industry needs.
- **At Tactical Level:** Flexible teaching methods through collaboration with real life businesses (e.g. PBL); and a multi-disciplinary approach (e.g. MBA and CPD format) with comprehensive projects provided to update soft skills.
- **At Operational Level:** Promoting design extensively from both private and public sectors; aligning business and design strategy to support key business outcomes and establishing forms of implication between industry and academia.

Secondly, the diagram (Figure 5.3) has included the three fundamental elements of Pg DME in China. They suggest that the three elements need to be formally realised, acting as they do as a ‘thread’ to putting a Chinese postgraduate design management framework into place (see Figure 5.3). They can be described as:

- **Leadership of ‘Design Driven Innovation’:** Basically, to promote leadership of design beyond the aesthetic to change experience, organisations, and opportunities. In terms of the knowledge, curricula and teaching and learning of design management, ‘design driven innovation’ should be implied in: 1) the government as a

“national design innovation system”; 2) organisations with the awareness to foster future design managers in business, and 3) the education institutions with design management graduates and design managers to be trained in multiple ways.

- **Tacit knowledge and ‘soft skills’ of Pg DME:** Tacit knowledge of design management is an understanding, application, and sympathy of the environment of the world at large, which is often classified as a higher level skill. It can be nurtured and taught through application and reflection. Creativity can be localised as a tacit knowledge of design management, which is a complex subject with diverse theories and practices that Chinese universities need to explore. Finally, tacit knowledge in the real world of ‘design management’ implementation is based on the recognition of ‘soft skills’ in the design and management process.
- **Cultural impacts on DMKT:** in terms of DMKT, the consideration is on which dimension of the cultural impact it comes under. These are the social culture dimension; organisational culture dimension; and university culture dimension. Successful DMKT in China is dependent on the deployment of the activities emphasised under each dimension.

Therefore, based on the summary of findings of the research study, in the next section (13.4), subsequent recommendations will be evaluated and discussed with aspects of Chinese Pg DMED at: 1) strategic level, 2) tactical level, and 3) operational level.

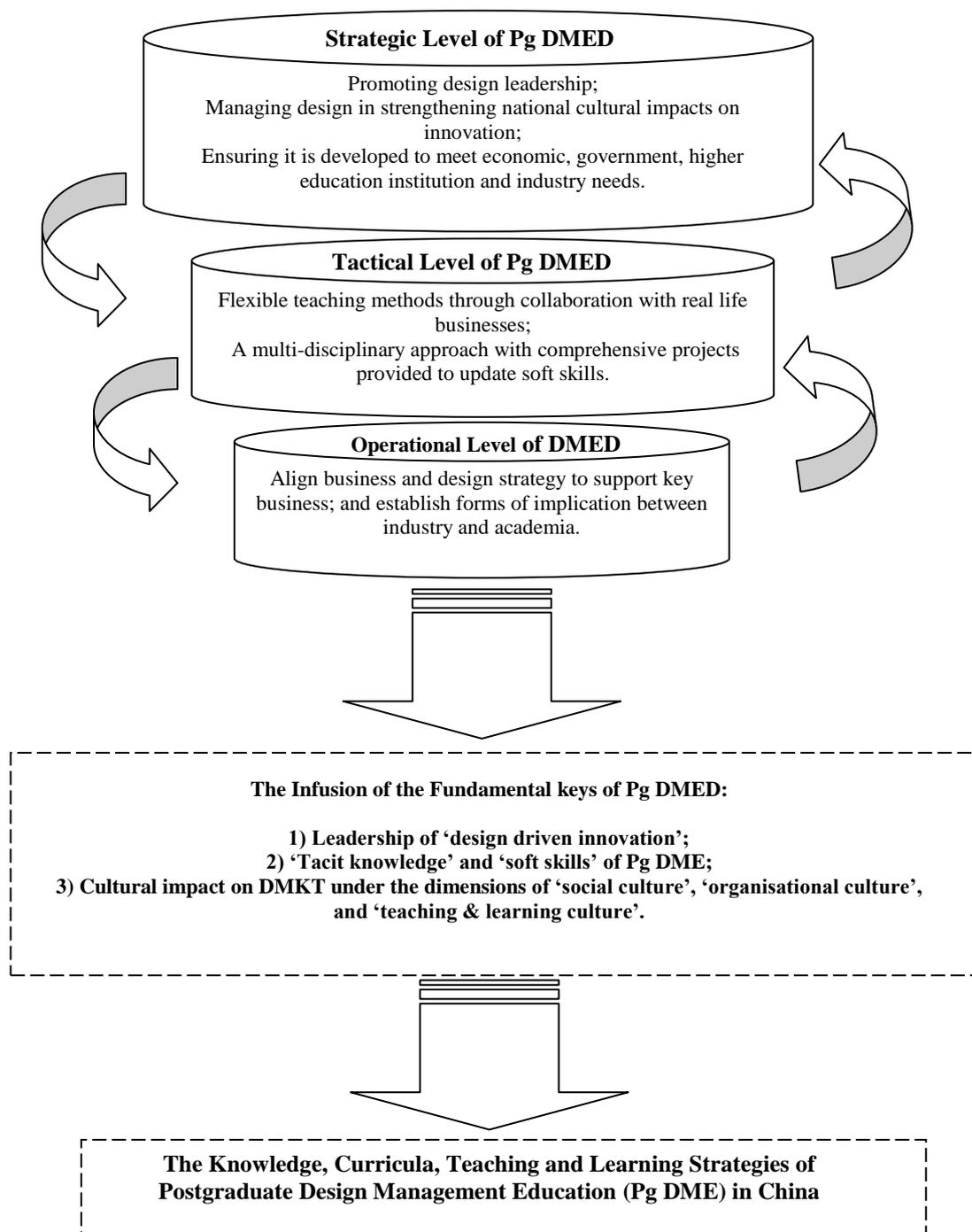


Figure 5.3 A Model for Creating Postgraduate Design Management Knowledge, Curricula, Teaching and Learning Strategies

13.4 Recommendations on the Implementations of Pg DME in China

13.4.1 Recommendation One: Support for Pg DME at national strategic level

The study has shown that the national strategic consciousness needs to pay attention to design and development both in academia and industry--both in policy guidance and financial support. In other words, this development needs to be enhanced to include a circle of stakeholders involved in design.

When organisations and industries are encouraged to use design as a strategic tool of business, the industry needs to be able to source good design managers, in order to build a positive resource for its development. In turn, universities must provide good quality graduates, in order for companies to invest in design management. However, they will need a credited economic environment, once companies are producing outstanding design projects, where the local market needs to respond with sophisticated buyers. Within this circle, postgraduate education in design management needs to perform effectively through the support of government policy.

Apart from through regulation making, there are several ways in which the performance of design in business can be improved, including the integration of design into public plans; such as innovation, industrial, and sustainability policies (Raulik-Murphy, Cawood, and Lewis, 2010). Although in China, business entrepreneurs are starting to realise they need to develop the right innovation mix by integrating product and service, as the basis of competition is shifting away from cost to customer value. At the same time, the Chinese government and leading Chinese enterprises are working to strengthen key innovation enablers in order to execute their innovation objectives successfully.

For instance, in 2004, Shenzhen, the most developed city in China, proposed the goal of building "the creativity design capital" and "the global creativity city" on cultural, creativity and industrial development. The renowned Shenzhen creativity industrial estate now includes: Nanhai architectural design industry zone; Nanyuan graphic design industry zone; Tianmian industrial design creativity zone and Jingyi animation design industry zone. The Chinese government has implemented a number of policies providing tax breaks and concessions in order to attract more international design enterprises and cultivate more outstanding home-produced design firms (Deng, 2009).

Above all, it is crucial to understand the dynamics and stakeholders involved in the various design projects. Understanding the organisation and structure of industrial and educational institutions, enables one to define ways in which design can positively affect the development at a national strategic level.

13.4.2 Recommendation Two: Enhancing understanding of design management in public and private sectors

Public and private sectors have to look at design from a large-scale industrial environment point of view as a core business process. In this process, design has to be treated as the application of creativity in order to make an enterprises' product or service more competitive.

There are certain ways to develop the understanding of design management in public and private sectors in China by improving the education of professional development within the organisation. Through successful international case studies and external consultancy projects, enterprises should be in a position to improve the product design process. In addition, it is a conduit to helping organisations understand the value of design through publications and conferences, thereby promoting the whole community to support design. It may further provide a wider and more effective range of staff training programmes

(providing work experience, multidisciplinary team development or case studies), to better meet the needs of employees. These courses should cater for managers concerned with design and for people involved in the design process industry in order to keep them up to date with new technologies and practices relevant to their work.

In essence, design is a systematic project, which not only requires designers, but also external resources to create value. Some of the design departments of Chinese organisations both in the private and public sector are only "artistic" in nature, and as such, this leads to both the failure of design education, and misreading of design in business. Organisations must change this perception by putting design on the business agenda; help to improve market competitiveness with management and foster innovative ideas. This requires, first of all, raising awareness of the value of design, followed by the effective management of existing design resources. However, it must be stressed that spreading awareness of design innovation as a corporate culture throughout the organisation is only the first step of DME in both private and public sectors in China.

13.4.3 Recommendation Three: Promoting the support of design management in HE sectors

The enhancement of understanding of design management in HE sectors will depend on broad societal acceptance of four propositions:

- A broad range of study options should be provided by the education systems considering providing study in design management, in order to meet a wide range of students talents, needs and ambitions;

- Pg DME and training must be strongly supported by multiple streams, such as the government, industry and the HE sector itself;
- Although the purposes of design research are varied, fundamental research of design management is of preeminent, long-term importance, and concentrated, sustained investment from the government and university support is essential to maintain high levels of transformational contributions to society; and
- Pg DME at different universities must remain free to innovate, shape their individual missions, and excel in a variety of ways.

These propositions need to be developed in China– in policy and in practice; a sound policy framework can enable and encourage the development of DME at postgraduate level. However, universities and their academic staff in design management must remain free to take decisions and act creatively within that framework. Therefore, three policy directions in keeping with the spirit of these propositions could enhance the high quality of DME development in China.

First, the strategic framework of Pg DME needs to do more to enable qualified students to pursue their ambitions across, as well as within, institutions, including further education. It would help address concerns about institutional diversity perpetuating distinctions within society. For example, Chinese HE has started to apply credit transfer mechanisms within institutions. An approach tailored to design management study could enhance the development of students' talents and ambitions, while simultaneously reaffirming the distinctive roles of the courses on which they study.

Second, concerns the issue of investment in design management research. Research requires a transformation from "basic design research" to "applied design management research"(see 6.6 for reference). Funding for design

management research programmes should have more exacting criteria for its creation. Moreover, scale and breadth are important to research training. However, there are two types of investigation in design management research which are particularly applicable to the Chinese environment. The first is concerned with conceptually exploring the dimensions of design in creative and broad strokes. The second includes analytically comparing design management hypotheses with day-to-day decision-making in actual firms. As a corollary step, collaboration should be encouraged between research programmes. The Chinese government needs to encourage exploration of the needs of China's design and research industries and develop an integrated service platform.

Finally, the increase in investment in HE from both public and private sectors in the future will ultimately allow HEIs themselves to have greater freedom to diversify and develop sources of income to support not only research but their educational activities as well.

13.4.4 Recommendation Four: Systemising international standards of Pg DME in China

In terms of ensuring quality in HE development, Pg DME in China faces a number of difficulties. Most importantly, whilst it knows how to set goals, in terms of quality assurance, there is little convergence of thought on the process undertaken to reach them.

Specifically, in HE quality assurance and evaluation systems, it needs to be properly decided 1) who should process the assessment; 2) how to assess and secure the evaluation; and 3) what content should be assessed.

As far as the questions are concerned, the recommendation is to emphasise the diversification of HE quality assurance, in coordination with the government,

industries and universities. Universities, for their part, should emphasise autonomy and freedom of self-construction. The government's main concern is to promote its policy making within HE quality assurance systems , where emphasis rests on shifting the pattern of HE quality assurance from 'control' to 'monitor'. Industry needs to become an active participant within the HE sector, and attach great importance on meeting the community's needs, with special emphasis on the relationship between quality performance and coordination.

13.4.5 Recommendation Five: Developing Pg DME via a flexible approach

The study has shown that Pg DME in China remains firmly within the domain of art school education. Although the ultimate goal was creativity, the emphasis was on imitation of masters, cultivation of style, and preservation of academic tradition. From the research study findings, one might conclude that there is real value to the student having the flexibility of changing the exact design of the curriculum midstream.

In contrast, design management has been broadening in the UK (see 7.1.2). The art school remains as one of the drivers of design management professional development, but design programmes are now located in a variety of other disciplinary settings. Some are located within engineering departments whilst others are located within one or another of the social sciences, including management. Moreover, MBA Design Management studies have been set up in few leading business schools in the UK, such as the MBA courses at Imperial Business School under the heading of Innovation, Entrepreneurship and Design (IED) (see Table 4.2). Most importantly, an increasing number of design management programmes in the UK are best understood as "university" programmes, which emphasise the essential humanism of the design and management enterprise.

At the same time, many design management programmes now offer specialisations that afford the student the opportunity to customise and fine-tune their postgraduate study (see 7.1.2.4). Once a set of core subjects is completed, students have the ability to mix and match specialised courses to suit their needs. Therefore, the Pg DME model relies on innovative enterprises, in order to train all levels of design innovation and management talent. The accumulation of intellectual resources has a direct effect on the production of outstanding graduates for business. The training objectives for the different needs of different businesses include such pre-requisites as R & D talent, management talent and planning talents. However, more importantly, the thread which permeates the design of management-related courses is the need to produce graduates with a creative bent, who are able to work in an increasingly diverse field. This has suggested that movement of DME into a flexible environment is very impotent and urgently need to be developed in China.

The rapidly changing business environment also fosters innovation, in terms of course content as well as the incorporation of technology in teaching methodologies. As examples of the former, Harvard Business School offers a half-semester class on the peculiarities of doing business in China and the European Institute of Business Administration (INSEAD) offers a course on the first 100 days of a business (Goorha and Mohan, 2010). The growth of the Web provides students with the opportunity to study at universities via distance learning programmes, as well as enabling schools to widen the pool of potential students. Internet-based assignments, testing and live tutorials between instructors and long-distance students are now a regular feature of most business programmes.

To conclude, although the implications of this flexible approach of design management in China are still unfolding, they will undoubtedly change creative thinking in many ways in the future.

13.4.6 Recommendation Six: Considering influences on PG DME curricula from a socio-economic environment and design industry development standpoint

The education system cannot be established without the consideration of socio-economic environmental factors because, as different socio-economic environments nurture a different mode of education, so does DME. It reflects a country's level of economic development. For example, all the data from this study suggests that the UK enjoys a mature industrial environment in respect of design management, which inevitably promotes the development of its Pg DME system.

Japan is another outstanding example of using its design industry environment to promote the development of its design education system. For example, Japan aims to implant design into engineering disciplines, using design to promote the development of new technologies. Education models are based on engineering design and management disciplines in order to enhance students' design-related business knowledge. As a result, in order to embed scientific and technological concepts into design and engineering related studies, many design institutes and engineering schools have set up courses such as design engineering, and design science. This suggests that Pg DME filtered into both design and business schools in the higher education sector at roughly the same time.

MA Engineering in Design Strategy in Kyushu University (see Appendix 1-10), for instance, was launched between 2003 and 2004 after research and analyses were made throughout Europe and America on design management HE by METI. From the curriculum design strategy it can be seen that design management related courses are more technology-centric in Kyushu University due to their different social environment. This also shows that the Japanese design management model is based on the origin of the design disciplines,

combined with technological innovation, design and related disciplines to develop new areas of design talent to cultivate and promote technical progress.

Therefore, the current situation in China demands the development of an environment suited to its own Pg DME model.

13.4.7 Recommendation Seven: Promoting design management research

As Buchanan believes that *'Design management education is the development of postgraduate programmes, and programmes of design research'* (Buchanan, 2001:17), postgraduate programmes have as their goal bringing student preparation to the level of mastery of their discipline. However, mastery comes in two forms. One is the mastery of professional practice, accomplished through "master's" programmes that teach students the most advanced methods and techniques of design work in specific areas of design. The other is mastery of the discipline itself for teaching and research. This is the goal of the doctoral programmes in design that are emerging around the world (Yee, 2010).

A series of international design conferences also come up with a specific focus on postgraduate design education (exp. Ph.D. in design) (Buchanan et al. 1998; Durling and Friedman, 2000; Popovic and Kim, 2001; Swann and Young, 2000). In respect of this, profound reflection on DME, by researching into theories and practices in HE, was called for (Pizzocaro, 2003; Durling and Friedman, 2003; Newbury 2003). Rust (2002: 143) argued that:

'The greatest fear seems to be reserved for the spectre that individuals might cynically propose, for example, a piece of product design as being research largely on the grounds that it is a new product and therefore new knowledge'.

This confusion hindered the understanding of the nature of practice-based and research-based production of design management knowledge. The discourses posit DME as a professional discipline in university settings. Therefore, design management knowledge by research is valued more highly than the practice in the industry.

Thus, the current situation in China demands the development of a research environment of design management. Although, there does not appear to be a long history in developing postgraduate programmes in design management in China, each year there is a growing number of such programmes which help to shape design management practice and DME. For example, Shandong University of Art and Design is proposing design management research at doctoral level in the year 2011. This will, in the long term, have a profound effect on the practice of design management and on design management education.

13.5 Chapter Summary

In this chapter (Chapter 13), the 3-phased findings have been summarised and critically analysed. A conclusive summary of key findings has been developed. Furthermore, subsequent recommendations have also been evaluated. The main achievements of this chapter are:

Firstly, a framework has been developed with the key stages of promoting design management knowledge, curricula, teaching and learning strategies in China. It can be divided into three distinctive levels, namely 1) strategic level; 2) tactical level and 3) operational level.

Secondly, three fundamental key elements have been identified through the investigation of DME development in China, which act as drivers to putting a Chinese postgraduate design management framework into place. They are:

- Design leadership of ‘design driven innovation’;
- ‘Tacit knowledge’ and ‘soft skills’; and
- Culture impact on knowledge transfer under the dimensions of 1) social culture 2) organisational culture, and 3) teaching & learning culture.

Finally, subsequent recommendations have also been evaluated with aspects of Chinese Pg DMED at: 1) strategic level, 2) tactical level, and 3) operational level. The most important issues arising from assessing perspectives on the recommendations that need further consideration are:

- Supporting in Pg DME at national strategic level;
- Enhancing understanding of design management in public and private sectors;
- Promoting the support of design management in higher education sectors;
- Systemising international standard of Pg DME in China;
- Developing Pg DME in a flexible approach;
- Considering influences on Pg DME curricula from a socio-economic environment and design industry development standpoint; and
- Promoting design management research.

The next chapter (Chapter 14) will consider the major findings and significance of the study. It also will include the limitations of the research and discuss recommendations for future research.

Chapter 14:

Conclusions

This chapter (Chapter 14) is a summary of the research, a discussion of the key results and conclusions, and an examination of the research in terms of its contribution to academic knowledge as well its practical application.

It will begin by revisiting the main aims and objectives of the research and evaluates the way in which the research was approached. The chapter will continue with a discussion of the major findings of this research study, followed by a reiteration of the results in the form of contributions to literature and finishes with a presentation of a number of recommendations for the future of research.

Therefore, the chapter aims to:

- Provide an overview of the thesis' aims objectives and research questions;
- Map out the major findings of this study according to the overview presented in the opening chapter, and assess their implications in order to answer the three research questions;
- Conclude the thesis with recommendations for theory and practice, discuss the limitations of the research, and opportunities of further study.

Figure 5.4 outlines this Chapter.

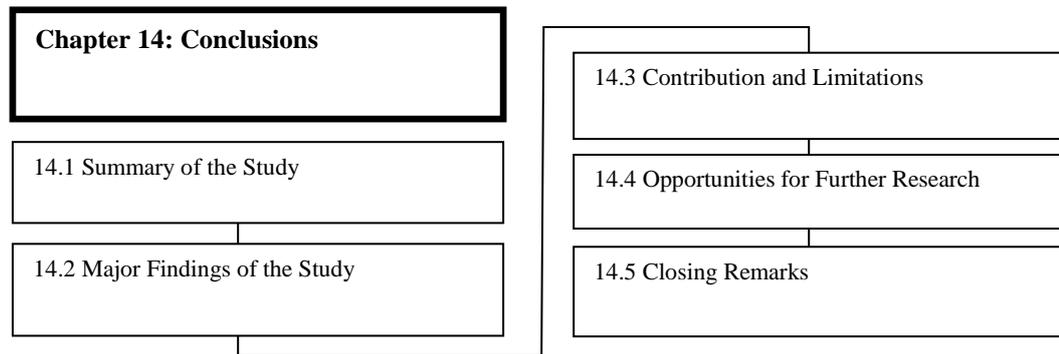


Figure 5.4 Chapter Map: Conclusions

14.1 Summary of the Study

The aims of the research study are (see 1.1.3):

- To explore the nature of the complex problems and challenges faced in DME when transferring from a UK to Chinese context;
- To identify differences between the UK and Chinese demands that drive educational development in Chinese postgraduate design management;
- To generate a deeper insight into Chinese Pg DME theory.

Table 5.1 illustrates the overview of the research questions and objectives, and its relationship with the findings provided in this research study.

Chapter Locations	Objectives	Research Questions	Findings
Section2: Chapters 2, 3, and 4	OB1: To conduct an extensive literature review, which focuses on the key theories in knowledge transfer issues; design management theory; DME curriculum development / practice; and teaching and learning strategies;	----	
Section4: Chapters 6	OB2: To conduct a piece of comparative research to analyse the environment of Pg DMED on multiple levels, including cultural, governmental and industrial levels both in the UK and China;	Q1, Q2,Q3 Based on the strategic level of Pg DMED: the creation of the strategic, long-term vision and planning for Pg DMED.	1 st Findings
Section 4: Chapters 7, 8, and 9	OB3: To develop a current model of core curriculum content in existing Pg DME courses both in the UK and China; investigate, analyse and establish the content which Pg DME courses currently deliver and skills developed in both countries;	Q1,Q2,Q3 Based on the tactical level of Pg DMED: design management teaching resources and process.	2 nd Findings
Section 4: Chapters 10, 11 and 12	OB4: To critically investigate the best practice of Pg DME systems in HEIs both in the UK and China; to identify critical issues that design management knowledge and its postgraduate education should entail in China for further investigation; OB5: To critically investigate current practice and attitudes towards the management of design in both public and private sectors in China;	Q1, Q2,Q3 Based on the operational level of Pg DMED: design management teaching and learning implementation.	3 rd Findings
Section 5: Chapter 13	OB6: To identify key issues surrounding the design management knowledge and practice in a Chinese context and to gain an increased insight into Chinese Pg DME theory; OB7: To critically investigate and understand the impact of findings on the interaction in Chinese social, industrial and educational environment.	Q1, Q2,Q3 Comparative analysis of 1 st , 2 nd and 3 rd Findings.	Major Findings
Section 5: Chapter 14	OB1-OB7	Conclusions of Q1, Q2, Q3.	Conclusions

Table 5.1 Research Questions and Objectives Explored within this Thesis

OB1: To conduct an extensive literature review, which focuses on the key theories in knowledge transfer issues; design management theory; DME curriculum development / practice; and teaching and learning strategies;

To achieve OB1, Chapters 2, 3 and 4 present the literature review of the thesis and also provided an examination of the issues which inform the development of DME in China. They also show how the influence of national culture, policy, industry, teachers and learners can impact upon design management knowledge, its education, course content and delivery. Furthermore, this literature review has also recognised the gaps in the current knowledge on western practice and documents the development of design management in China. Most importantly, each level of DME development will involve answering these research questions.

Objective one has been achieved in this part of study, and the key theories in knowledge transfer issues; design management theory; and education and curriculum development / practice have been divided into Macro, Meso and Micro Levels (see Table 2.8 and Summary of Section Two).

OB2: To conduct a piece of comparative research to analyse the environment of Pg DMED on multiple levels, including cultural, governmental and industrial levels both in the UK and China.

To achieve OB2, reference is made to the 1st phase of the comparative research study (Chapter 6). The 1st set of research study findings have been generated; based on the strategic level of Pg DMED, the findings involve answering research questions 1-3.

OB3: To develop a current model of core curriculum content in existing Pg DME courses both in the UK and China; investigate, analyse and establish the content which Pg DME courses currently deliver and skills developed in both countries;

The 2nd phase of the comparative research study (Chapter 7, 8 and 9) reflected on the 3rd objective of the research study. This phase of the study conducted a piece of current comparative research to identify the current models of Pg DME through secondary sources both in the UK and China. The 2nd findings were then generated, based on the tactical level of Pg DMED: design management teaching resources and process. The findings also involve answering research questions 1-3.

OB4: To critically investigate the best practice of Pg DME systems in HEIs both in the UK and China; to identify critical issues that design management knowledge and its postgraduate education should entail in China for further investigation;

OB5: To critically investigate current practice and attitudes towards the management of design in both public and private sectors in China.

The 3rd phase of the comparative research study (Chapter 10, 11 and 12) achieved objectives 4 and 5. An investigation of best practice in Pg DME systems through the in-depth interviews of leading academic individuals selected both in the UK and China was conducted; then the results were tested against Chinese needs through a collection of primary data both in public and private sectors in China. Finally, the 3rd findings were then generated; based on the operational level of Pg DMED, design management teaching and learning implementation. The findings also involve answering research questions 1-3.

OB6: To identify key issues surrounding design management knowledge and practice in a Chinese context to gain an increased insight into Chinese Pg DME theory.

OB7: To critically investigate and understand the impact of findings on the interaction in Chinese social, industrial and educational environment.

In Chapter 13, The 3-phased findings were generated, a comprehensive summary of key findings developed, and subsequent recommendations evaluated. This critically reflected on the 6th and 7th objectives of the research study. Finally, major findings of the research study were generalised; based on a comparative analysis of the 3-phased sub-findings.

By achieving the above objectives, the aims and objectives of the research project have been substantially fulfilled at every stage.

14.2 Major Findings of the Study

The major findings achieved objectives 6 and 7 of the thesis. The research questions answered in this thesis are:

14.2.1 Q1: How does Chinese postgraduate design management education (Pg DME) deal with the challenges to knowledge transfer; posed by the need to accommodate and embrace cultural issues?

The culture of transferring design management knowledge does not follow a uniformed path, depending fundamentally on the historical, political and economic setup, as well as on governmental commitment to design. However, cultures which affect ‘design management knowledge’ can be classified under different dimensions. For example, it is created in different ways in different countries, it can be described as the ‘big culture’; different organisations such as industries and universities, it can be described as the ‘mid culture’; and

different teaching and learning groups, it can be seen as the ‘small culture’. The major implications for ‘transferring’ design management knowledge to China, are to 1) critically identify the dimensions of the cultural scheme are under; and 2) build up the quality of relationships among these different dimensions of ‘culture’.

Firstly, social culture plays an important role in developing and advancing knowledge. Thus the ‘big culture’ scheme of Pg DME in China is to create a social environment to encourage design management knowledge, in which a social context promotes education and learning, and appreciates creativity. As well as major economic, political, and social factors, industrial events have a fundamental influence over Pg DME and its policy making. The evidence in this research study has suggested that Chinese ‘social culture’ regarding DMKT should be enhancing the internationalisation of Pg DME via a unique Chinese path. The implications are:

- Promoting the policy on design management knowledge and education while regulating engagement in the design management curriculum, building leadership to champion design’s role in innovation, and developing a regulations and legislation system for design management in China;
- Establishing organisational models of collaboration in design management. This further demands the collaboration between technology, business, industrial design and design education and other related private and public sectors;
- Establishing a quality HE system. The Chinese HE system needs to transform itself into one that is consistent with the high quality standards demanded.

Secondly, ‘university culture’ has a massive impact on transferring design management knowledge. As education and learning is a fundamental external factor that influences knowledge, it plays a crucial role in developing the environment of design management knowledge.

Creating a ‘university culture’ for DMKT reveals the importance of a systemic and political approach to Pg DME. The evidence in this research study has suggested that the conditions necessary for creating a ‘university culture’ capable of promoting design management knowledge are:

- A universal quality standard setting both in curriculum and teaching and learning management;
- Awareness of the national context when designing Pg DME programmes.

Moreover, from the research study it can also be surmised that ‘university culture’ on DMKT in China demands an integration of design management teaching and learning on a strategic and effective platform. As this study focuses on postgraduate level in particular, the evidence suggested that:

- A reflective and experimental learning culture needs to be considered as an important characteristic of progressive Pg DME in China;
- Chinese universities need to understand and take account of a range of student orientations and types of engagement.

Thirdly, ‘industry culture’ is the bridge for design management knowledge to be ‘transferred’ to a ‘real life’ practice, in the ‘right way’. This requires the organisation to devote design resources to actively managing the process. This, in turn, means a culture unifying design goals and commercial strategy; a culture promoting the awareness of design innovation and using it extensively;

and also a culture stimulating collaboration, as well as the forms of implementation between industry and academia. This study also suggested that Chinese enterprises like to keep their knowledge implicit and are willing to share it informally. Most importantly, trust in intra-personal relationships among employees can partly mitigate the impact of the above cultural characteristics.

Finally, from the student perspective, there remains the ‘learning culture’. Design management as a culture of moving towards a flexible university model for multilevel delivery is the way forward for Chinese Pg DME. The ‘learning culture’ will also be discussed in greater detail in 14.2.3, as a main purpose of the 3rd research question.

Therefore, from the study, one can come to the conclusion that the discipline of design management in China should be based on a "cultural form". Perceived cultural compatibility in culture cannot be divorced from the national context (Hofstede, 2001; Veiga et al., 2000). Furthermore, design management should play an important role in a diversified cultural environment in China. However, it is not necessarily ‘transferring’ design management knowledge from one country to another. The essential idea is to be able to understand a culture and also be comfortable portraying it in a different light.

In essence, the Chinese management of design should be considered an important strategic tool leading to business success. Design management, as a subject, should be developing ‘design-minded leadership’ (see 13.2.1) in a cultural environment. ‘Design driven innovation’ leadership related skills that are increasingly valued by both private and public sectors include *‘creativity, flexibility and adaptability, communication and negotiation skills, and management and leadership skills that can be deployed within teams and projects as well as within organisations’* (Tether, Consoli and Gagliardi, 2005). These play a pivotal role in being able to embrace the diversified social,

business and university culture of transferring design management knowledge in China. Figure 5.5 illustrates the relationship of the culture and ‘design-minded leadership’ in the knowledge transfer of Chinese Pg DME.

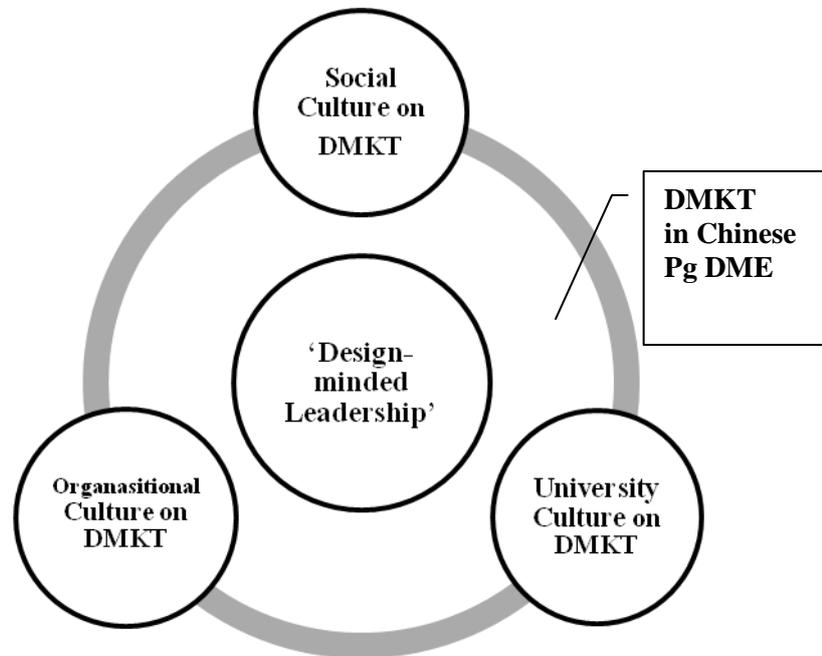


Figure 5.5 Cultural Demands on Design Management Knowledge Transfer (DMKT) in Chinese Postgraduate Design Management Education (Pg DME)

To answer this question, another consideration is the nature of tacit knowledge within both design and management and the need for best practice models as exemplars which are largely based on cultural norms. Within the context of what is now a global design industry, adaptation or standardisation of DME is similar to that facing any organisation working in a global context. Clearly, Pg DME should be different in China and this can help the subject to mature and develop globally. Its development here is to provide new insights into the subject and its potential from which others can learn.

14.2.2 Q2: What should Chinese design management students learn on postgraduate design management education (Pg DME) programmes in order to meet industry needs?

This study suggested that China should take the opportunity to re-evaluate current models of UK design management in terms of curriculum and teaching and learning strategies; and value in China to develop innovative solutions to China's many challenges, in order to meet industry needs; issues such as the direction of the economic development; industry itself, and graduates employment.

Therefore, this solution urges Chinese Pg DME programmes not only to embrace successful UK models, but also investigate specific Chinese HE circumstances, in order to meet industry needs. The position of 'design manager' has been recognised in current Chinese industry practices. China advocates developing creative design industries under the strong direction of the government, and design management talent is urgently needed. According to the research study findings, Chinese industry requires design management subject specialists. They require design managers with a strong creative foundation, and skills of design marketing, design communication, design research, and most importantly- business skills. These skills have to be integrated to meet the demands of Chinese society, industry needs and design managers own career planning potential. However, it is slightly contradictory as thousands of design related graduates are struggling to get a job in China.

a, An Establishment of a Flexible Framework of Pg DME

There is a need to establish a flexible course structure to facilitate and re-assemble the necessary resources to meet existing requirements from industrial needs in China DME. This requires not only a theoretical subject knowledge

framework, but also aims to introduce a practical element through flexible teaching methods by collaborating with real life businesses.

- 1) **Multi-disciplinary approaches.** Multi-disciplinary approaches were presented in Chinese HE institutions and included a wide range of specialists from design management related disciplines, and business. This reflected the overall approach to design practice which is experienced in China– an understanding of the role of design in innovation, acceptance that it is on a par with the more traditional business specialists and belief that working together on design projects achieved the best results. Thus, a multi-disciplinary approach is seen as a guarantee for successful innovation of postgraduate design management study in China.

It is particularly important to provide the opportunity to tailor the programme of study around students own specific area of interest and career plan. Chinese design management recruits are expected to know about markets, business and users, and employers look for specialists who can work in multi-disciplinary teams. For example, Pg DME courses should be tailored around students' own particular specialisation and be linked with industry, policy, and the strategic role of design in business and marketing and design practice; especially where project management is concerned.

However, HE institutions, in terms of the direction and mode in personnel training, should also be focusing on the space and capacity of employment. For example, some courses aim to develop, communicate and demonstrate the potential value of design and branding. Preparing students from design and other creative disciplines to design innovative strategies is paramount. Design management features students need to

find employment are closely linked to the direction creative disciplines take.

From this research study, it has also been realised that Chinese industry has a strong understanding of product and a focus on new product development of design, as well as its business context. However, Design management in Chinese industries is based on the project management of the design task rather than a multi-discipline affair geared towards the needs of industry. The interviewees from Chinese industry have a common understanding that Chinese design management terms should emphasise product/service design at the expense of more pervasive concepts. In this perspective, the future of Chinese industry rests on the need to encompass and explore more complex and senior terms of design management; including such aspects as culture and sustainability.

Considering the gap between what to teach in HE institutions and how knowledge should be applied in the industries, the improvement will not happen independently, from industry or HE institutions, but rather by building a communication platform to bridge the gap between them.

- 2) **Collaboration with industrial and institutional partnerships.** This approach is very important for developing design management knowledge in the industry. Universities also need to develop links and co-create with industry, across all sectors.

Collaboration between industries and universities is vital if HE institutions are to compete with one another and remain in a position to design curricula which are fit for purpose; thereby producing graduates with the necessary skills to operate in an ever more competitive market. Furthermore, in China, it is common to see design jobs based with 'in-

house' teams in large businesses; therefore collaborations are also of mutual benefit for industry, with businesses being able to recruit the best talent, as students now learn about industry contexts and corporate cultures.

Whilst this study suggests that the industry in question, whether in the public or private sector, is largely irrelevant, future design management graduates will be expected to have at their disposal a set of readily transferable skills. In order to put those skills into practice, there appears a widely held belief that awards must contain provision for a work placement or 'live project'. Although the difference between the public and private sectors is becoming less marked, permitting the nurturing of perhaps more broad-based, generic skills, there remains a need to adapt to the changes in the market place and curricula may have to change to reflect this.

- 3) **PBL.** The issue of which skills need to be honed is compounded by the fact that organisations are beginning to operate in an increasingly global environment. PBL is essential to Pg DME in China, particularly concerning design management and innovation in a multidisciplinary and international context. Pg DME courses should also place great emphasis on the development of interpersonal and professional communication skills. These include 1) collaborating with external organisations involved in design; 2) working directly with designers, providing insight into the crucial relationship between designers and non-designers. There must be opportunity for students to reflect upon and develop essential interpersonal, team-working, motivational and influencing skills. Moreover, providing comprehensive projects to update soft skills and enhance designer-focused information and knowledge, is becoming ever more important. The generic soft skills of time management, working in groups and giving presentations, for

example, are now joined by the need to provide graduates with an understanding of working across cultures. Moreover, students must be taught to reflect and apply their knowledge and experience of the world to potentially more complicated situations and, perhaps, even learn to alter their beliefs and frames of reference. Graduates now not only need to operate nationally, but internationally and, skills development must reflect this.

Furthermore, using PBL ideas to solve the current employment problem is also crucial. How to link the knowledge that students have learnt to reality must be explored; as well as to further integrate actual job requirements and school education.

- 4) **Developing different methods of course study.** Methods such as MBA& CPD, and collaboration with international universities, need to be promoted to satisfy various needs from industry in China. Design management development in China is changing the design function within an organisation and although this has yet to permeate all levels of culture and society; for example, design management at Chinese university level is still largely rooted in design schools, the re-appraisal of the discipline to include the wider aspects of culture is worth exploring.

i), Pg DME in the implementation of business administration, not only enhances the value of design, but also enhances managers awareness of the design process and design management of knowledge, thus contributing to scientific and effective management of design, and ultimately reducing the company's costs. Meanwhile, the implementation of professional designers in management education is designed to help them develop innovative thinking and business-related capabilities, such as design proposals, communication, review and

management capabilities, which can respond to changing business, social, economic and technological environment.

ii), Professional development programmes can be focused on specialised topics or modules within the design management curriculum, or customised for an individual corporation or company. Each of these types of training programme may have its own strength in terms of quality and duration. Therefore, it might prove a valuable model of Chinese Pg DMED for industry. Furthermore, PBL and assessments linked to reflection and CPD appear to be the way forward for Pg DME in China. However, in order to remain at the cutting edge of teaching and learning approaches and techniques, there is a need to encourage research in the field and to look at what other practitioners are saying and doing.

iii), Collaborative international universities deciding on the location of their design management courses should consider favourable government policies and the availability of teaching resources. It also provides learning and networking opportunities resulting from the integration of students and industries.

In short, both academic theory and business practice contribute to the domain of DME, but their collaboration is limited. A common framework for both the academic world and practitioners is required. There are commonalities and differences between the academic and industrial approaches to design management theory. Possible integration in the form of a framework may provide more positive results.

b, Leveraging Tacit Knowledge and Soft Skills in Design Management

From the research study it can be concluded that, by considering the diversity of provision which is possible under the design management banner, tacit knowledge in DME plays an important role in realising ‘design management’ knowledge becoming ‘real’.. Moreover, postgraduate level study in design management must emphasise the skills of a more tacit nature.

The author suggests that tacit knowledge in design management is an understanding, application, and sympathy of the environment of the world at large; often classified as higher level skills. This tacit knowledge is often taught through application and reflection. The application and reflection actually make tacit knowledge in design management visible, and through this process, enable ‘tacit knowledge’ to be verbalised and interpreted. In terms of applying design management ‘tacit knowledge’ in the industry:

Firstly, it is clear that tacit knowledge, without the fundamental theory of design management, leads to disempowerment for design management professions in real life. However, exercises in problem based real life situations in developing design management skills seem to be the way forward for Chinese DME development. This study suggests that Chinese organisations like to keep their knowledge implicit and are willing to share. However, at a macro organisational level there is still need to share tacit knowledge using explicit/formal knowledge management approaches.

Secondly, the realisation of tacit knowledge in real life ‘design management’ implementation is based on the recognition of ‘soft skills’ in the design process and management. The consideration of ‘soft skills’ engagement in current postgraduate design management study is now considered essential to development. Soft skills in design management include communicating, listening, engaging in people. However, there are other soft skills more

objective in nature, such as cultural sensitivity, the awareness of local customs, and fluency in a second or third language, which have led to an interesting philosophical division among subjects.

c, Infusing ‘Design Driven Innovation’ in Curriculum Design

In terms of Chinese Pg DME curricula, it is essential to increase awareness of the importance of fostering future design managers in the business, with an understanding of global civilisation, and uniqueness of Chinese culture - it reflects the importance of embedding innovative capabilities. In this case, innovation rarely depends on the skills of individuals, companies or universities working in isolation, but instead on a culture of mutual collaboration and purpose. For example, industries should be increasingly building capacity for high end activities including design research, business training, and product development, merging design management with higher institutions. Design needs to be understood as an essential part of innovation and is used extensively by industry in China and ‘convergence’ should be used as an important term in industry.

Therefore, to conclude the answer for research question 2 (see Figure 5.6 of the illustration of the essential elements of postgraduate design management curricula to meet industry needs), to meet industry need, Chinese Pg DME programmes should be set up with ‘design driven innovation’ as a core of curriculum design. Leveraging tacit knowledge and soft skills particular to design management under the framework of a flexible approach, which not only includes a theoretical subject knowledge framework but also aims to introduce a practical bent through flexible teaching methods by collaborating with real life businesses, should also be considered.

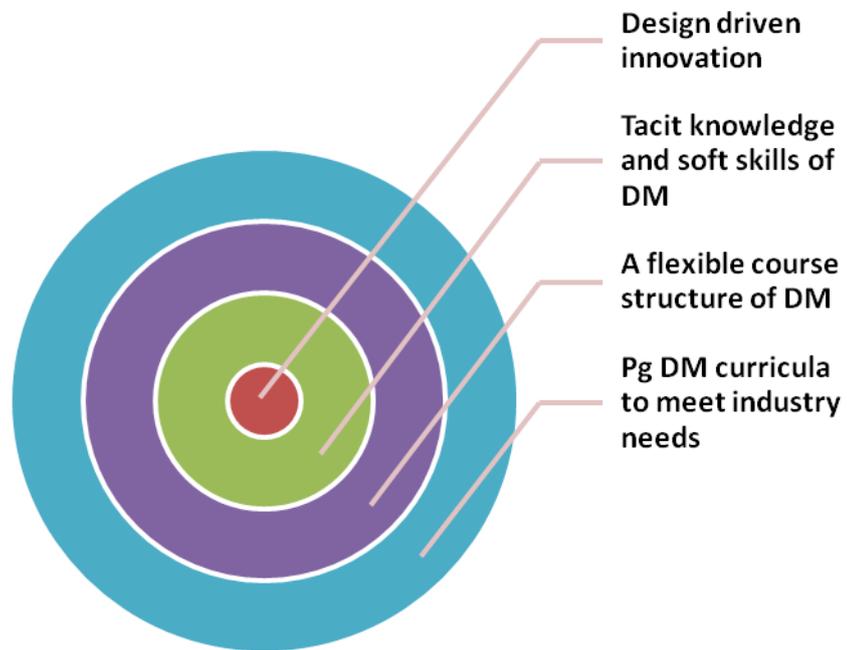


Figure 5.6 Postgraduate Design Management Education (Pg DME) Curricula to Meet Industry Needs in China

14.2.3 Q3: How should the relationship between learning styles and cultural aspects, in terms of postgraduate design management education (Pg DME) in China, be accommodated?

a, Teaching and Learning Strategy

The research study has provided the findings that: in terms of teaching and learning in Chinese Pg DME, greater effectiveness and greater efficiency in teaching and learning should be promoted at national, university, student level; and most importantly, at all levels in between.

At national level, policies on DME and development across China appear to be influenced by various factors. Ways in which teaching and learning are often

defined to be the result of an accommodation between national contexts, histories and cultures. However, the policy-making and policy implementation processes should demonstrate different levels of engagement on the part of the various key stakeholders. The Chinese government machine should be consistently focused on innovation in teaching and learning as a key to quality enhancement.

At university level, it should develop its own characteristics and platform to improve the effectiveness and efficiency of teaching and learning, such as promoting a 'learning by practicing' learning strategy, by collaborating both within HEIs, external businesses and other organisations. The Chinese context demands design management graduates and design managers to be trained in multiple ways. As industries change and converge, education systems in China must evolve to supply industry not only with people who have an appropriate and useful mix of skills and experience, but a supply of differently skilled design teams; in order to drive innovation.

At student level, is the implementation of the programmes' very own design management teaching and learning strategy set up by the HEIs. However the study suggests that acquiring transferable skills and an understanding of wider career possibilities should be the priority of the students' educational achievement.

Therefore, as curricula change to meet the needs of industry and student expectation, course design and classroom culture should mirror this adjustment, as synergy between what is expressed at strategic and operational level needs to be maintained. As such, students who undertake placements or 'live projects' must be provided with the necessary skills to engage and survive in a business setting. Students must be presented with a theoretical underpinning and a whole host of soft skills in order for them to operate successfully. This can only be achieved through the development of modules and assessment,

which encourage the nurturing of these skills, a practical approach to teaching via PBL and a classroom environment conducive to learning.

In summary, China's education system is required to play a key role in China's transition to a knowledge society. As Pan (2008) suggested:

'In this knowledge-driven society, it is important to focus on the longer-term goal of preparing students for life, equipping them with rapidly obsolescent body of knowledge, and developing their faculties for understanding, applying and creating knowledge, as well as their ability to constantly refresh and upgrade their knowledge. A quality graduate is life-skills oriented, learning-enabled and lifelong capable'.

b, Breaking the Stereotype of Learning Style in Chinese Postgraduate Design Management

From the research findings it can be seen, collaboration between industries and project-based learning are becoming increasingly important teaching and learning strategies in DME in China, particularly concerning design management and innovation in a multidisciplinary and international context. Therefore, to create well functioning structures and practices between universities and companies, cultural aspects of learning styles are being constantly interpreted.

The study also shows that learning styles are influenced by a variety of complex cultures which transcend boundaries to include national, institutional, and student classroom cultures. However, learning culture is not necessarily representative of national culture. As McKay (2002: 29) suggests:

'An understanding of the local culture of learning should not be based on stereotypes, or a received view of culture, in which assertions are made about the traditional roles of teachers and students and approaches to learning, often

in reference to western culture. Rather, it should depend on an examination of particular learning environment'.

It is the ability to recognise that individual learning culture, both on the part of the teacher and learner, is influenced by the more immediate customs and norms of the real-life learning environment, which should determine what and how to learn within a given framework.

These findings have particular relevance to Chinese DME, where form giving is the basic skill of education. In short, what is needed is a deeper understanding and interpretation of creativity than the mere ability to represent what already exists. In short, the teaching and learning strategies of Chinese Pg DME should revisit this issue in order to ensure the provision of an environment conducive to learning.

Whilst this study suggests that there is no one over-arching definition of culture, students need to be aware that things may operate differently in various parts of the world where people work to diverse constraints. Nevertheless, the skills developed, if determined by industry and honed through placements and projects, should stand the students in good stead. By providing good supervision and support mechanisms and an unthreatening teaching and learning environment, it is hoped students will learn to take risks with their learning and begin to reflect on where they are now and where they want to be.

Therefore, to conclude the answer for research question 3 (see Figure 5.7); to accommodate the relationship between learning styles and cultural aspects, Pg DME in China should create learning culture which is conducive to learning:

At national level, the policy-making and policy implementation processes should demonstrate the support of postgraduate design management teaching and learning; At university level, it should develop a platform promoting a

'learning by practicing ' learning strategy; At classroom level, teaching via PBL should be approached, which is influenced by the more immediate customs and norms of the real-life learning environment. Moreover it should determine what and how to learn within a given framework. However, learning culture should mirror this adjustment, as synergy between what is expressed at strategic and operational level needs to be maintained.

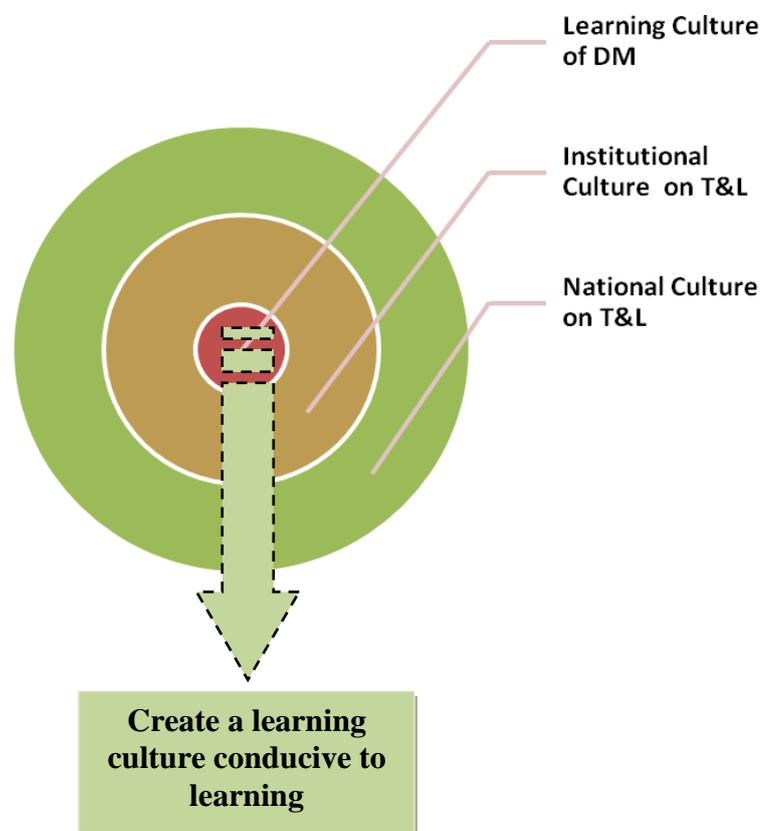


Figure 5.7 'Learning Culture' of Postgraduate Design Management Education (Pg DME) in China

14.3 Contribution and Limitations

14.3.1 Contribution to Knowledge

Historically there have been limited DME studies undertaken in China thus making it difficult for Chinese design managers to understand western approaches to strategic design management and to consider how western design management practice could be applied within Chinese organisations. However, this is arguably one of the most pioneering research studies to question western assumptions about DME in a Chinese context. It also advances knowledge of the similarity and congruence between design and DME in China.

This study also provides a critical understanding of the transferability of education provision, and has developed a Chinese perspective on management of design at strategic, tactical and operational level. The outcomes have also identified which specific knowledge transfer issues need critical consideration from a western to a Chinese context.

This research contributes to the literature by addressing:

- 1) Frameworks of Pg DMED in China at strategic, tactical and operational levels;
- 2) A model for creating postgraduate design management knowledge, curricula, teaching and learning strategies;
- 3) A model for cultural demands on DMKT in Chinese Pg DME;
- 4) A model of Pg DME curricula to meet industry needs in china;
- 5) A model of 'Learning Culture' of Pg DME in China.

The study's main findings have resonance and relevance for: 1) Chinese government design and educational policy making; 2) HEIs; 3) Public and private sectors in China; 4) Design management academics and learners.

Furthermore, the study has value for academics in the broader field of design management; education and cultural studies. The findings also contribute to the research base.

14.3.2 Limitations of the Study

Like all field research, this study has a number of limitations.

- This research attempted to build upon research in the areas of DMKT and its educational curricula and teaching& learning strategies in China, in particular. It has aimed to create new knowledge in an area where there was little directly relevant research; therefore the theory developed in this thesis may benefit from further practice and research.
- It is acknowledged that the study may appear limited in sample size. However, although the sample seems rather small, it is actually made up of 5, out of a possible 14, award leaders; all recognised experts in the field. This represents good coverage.
- There are also limitations inherent in any qualitative study, including the selection of the study population, the role of the researcher, design, and the interpretation of the findings being case specific.
- Questions may, in certain instances, be deemed rather ambiguous and open to interpretation. However, the author's presence in the interview process allowed for this and enabled clarification to be sought.

- The recommendations may not, because of the time scale, be implemented. Nevertheless, as this project represents the beginning of a research journey, it leaves opportunities for further research.

As suggested, the researcher's presence in the research process adds rigour and leads to greater validity.

14.4 Opportunities for Further Research

The results of this research study suggest a number of opportunities for further research, in both the methodology used to collect and analyse the data and the further research areas. There are several issues that emerge from the research which have, in the past, enjoyed relatively little discussion within the scope of research. These themes undoubtedly warrant further investigation.

a, In terms of Research Areas:

This study is exploratory and allows the researcher to gain insights which clarify and define the nature of applications in Pg DMED. It has also generated frameworks and models of developing Pg DME at different levels (strategic; tactical and operational), with particular reference to the Chinese environment. This work therefore serves as a foundation for further development in the field of DME, at all levels of study (including Undergraduate and Postgraduate level) among HEIs.

The implementation and validation of the recommendations is also a subject for further research. Possible research studies which could be undertaken are listed below:

- **The Chinese policy study in DME.** This research study has covered a broad view of national policy related to design management and its education. Further in-depth research on national policy is recommended, to consider aspects from different support sectors at different levels (from the national to the regional support programmes) of design management and its education. This will produce rich ideas for developing DME at a strategic level.
- **Study of how to enhance understanding of design management in public and private sectors in China.** Further study is required into emerging industries. For example, for the creative and service industries to grow rapidly and make a significant contribution to the economy, a design management role needs to be fostered to increase competitiveness. Further study is therefore recommended, to be conducted into design management development in both public and private sectors. These include an examination of coherence in design management awareness with a study sample of organisations from both private and public sectors.
- **Study of the promotion and support of design management in HE sectors.** DME and training must be strongly supported by multiple streams, such as the government, industry and the HE sector itself; therefore further study should be provided to consider study in design management, by the education system, in order to develop the wide ranging talents, needs and ambitions of students.
- **Research on DME system standards in China.** In terms of ensuring quality in HE development, DME in China faces a number of difficulties. Most importantly, whilst it knows how to set goals, in terms of quality assurance, there is little convergence of

thought on the process undertaken to reach them. Therefore, further research is recommended in HE quality assurance and evaluation systems; the essential features which could be considered are: 1) who should process the assessment; 2) how to assess and secure the evaluation; and 3) what content should be assessed.

- **Research on how to develop a flexible approach to DME.** From the research study findings, one concludes that there is real value to the student having the flexibility of changing the exact design of the curriculum midstream. Further study could be undertaken on the possibilities of a new paradigm of DME, including such pathways as CPD, MBA, short course training, distinct- learning and E-learning.
- **Study on the influences on design management curricula from the socio-economic environment and design industry development perspective.** This research study has concluded that different socio-economic environments nurture a different mode of DME. It also reflects a country's level of economic development. Therefore, the current situation in China demands the development of an environment suited to its own DME model. Further study is recommended on the investigation of DME teaching models, with detailed teaching aims and objectives, teaching content, learning outcomes and teaching and learning strategies to meet the needs of specific courses of study.
- **Study on promoting design management research at PhD level.** The research study also suggests that the current situation in China demands the development of a research environment of design management. Although, there does not appear to be a long history in developing postgraduate programmes in design management in

China, each year there are ever growing numbers of such programmes which help to shape design management practice and DME. Therefore, further research on developing design management research is recommended.

b, Methodologically:

With regards to research design and methodology, desk-based research was undertaken at the 1st and 2nd phase of the comparative research study. However, it may have proved beneficial to acquire quantitative and qualitative samples at these stages. For example, at the following: 1) phases, i.e. 1st and 2nd of the comparative research study: the DME related policy and curriculum development comparative study; 2) levels, i.e. strategic level of DMED, and tactical level of DMED; 3) approaches, i.e. in-depth interviews from both UK and China. This may have generated more research findings to facilitate further comparative studies.

14.5 Closing Remarks

Although design management knowledge and its education and the many challenges it faces have been highlighted, there remains the need for a clear understanding of the steps needed to facilitate design management leadership at government, organisational, institutional and personal levels, and view the changes as just another stage of China's transformation.

Design management must be aware of itself as a discipline and be able to situate itself in time and place in order to make value judgements on what sort of education it wishes to provide. However, there remains uncertainty as to whether design management serves a business, management or design function, or a hybrid of the three and, as such, debate concerning which school it should rest in is ongoing. From a cursory glance at the comments from the study, it

becomes apparent that simply determining a ‘catch-all’ definition of design management is highly contentious, bound as it is by history and tradition and location within an institution. Perhaps the issue is further compounded by the fact that design management, as a discipline, has experienced great change, from its origins in the 1960s to the present day and has had to learn to adapt to the vagaries of fashion. Nevertheless, irrespective of the ‘tag’ afforded to design management, there is a fundamental need to operate strategically and develop an approach, which is able to operate across faculties, universities and promote links across industries and cultures.

In this study, the theoretical and practical concepts of DMKT and DME in China have been critically investigated and the frameworks have also been provided. However, the road ahead for Chinese DMED is not a straightforward path, a number of fundamental questions remain to be explored. Can the concepts provided in this research study lead to new forms that are suited to the emerging environment of international competition in the market place? How will those concepts help Chinese design management professionals make an original contribution that is more than a mere imitation of the west?

Further research is still required to fill gaps in current knowledge and also to document the development of design management knowledge and its education in China. However, China has started her journey and continuing discussion will shape Chinese design management knowledge in the future.

References

Abbing, E. (2005), Brand Driven Innovation: Fulfilling brand promise through new product development, Master thesis (Master of Design Management), Nyenrode University, Netherlands, November 2005. <http://www.branddriveninnovation.com>

Absalom, D. and Degen, T. (1998), Teaching across Cultures, Hong Kong Journal of Applied Linguistics 3/2: 117-132.

Acklin, C. (2009), Lucerne Design Management Model, Lucerne University of Applied Sciences and Art – Art & Design.

Acklin, C. and Hugentobler, H.K. (2007), Design Management for Small and Medium-Sized Enterprises: Development of a Design Management Guide for the Use of Design and Design Management within Corporate R&D and Decision-Making Processes, Proceedings for «FOCUSED», Swiss Design Network Symposium 2008 , Berne 2008.

Agarwal, A. and Salunkhe, U. (2011), New Approaches to Design and Management in India, in Cooper. R., Junginger, S., Lockwood, T. (2011), The Handbook of Design Management, Berg Publishers.

Ainsworth, M. and Morley, C. (1995), The Value of Management Education: Views of Graduates on the Benefits of doing an MBA. Higher Education, Vol. 30, No. 2, pp.175–187.

Allen, R. and Rooney, P. (1998), Designing a Problem-Based Learning Environment for ESL Students In Business Communication, Business Communication Quarterly 61(2): 48.

Altrichter, H., Posch, P. and Somekh, B. (1996), Teachers Investigate their Work, An introduction to the methods of action research, London: Routledge.

Alvesson, M. (2001), Knowledge Work: Ambiguity, Image and Identity, Human Relations, Vol. 54:7, pp.863-886.

Amabile, T.M. (1983), The Social psychology of Creativity, New York: Springer-Verlag.

Amabile, T. M. (1998), How to Kill Creativity: keep doing what you're doing. Or, if you want to spark innovation, rethink how you motivate, reward, and assign work to people, Harvard Business Review, September-October pp: 77-87.

- Almeida, P., Grant, R. M. and Song, J. (1998), The Role of the International Corporations in Cross-border Knowledge Transfer in the Semiconductor Industry, in M. A. Hitt, J. E. Ricart, I. Costa, and R. D. Nixon (Eds.), *Managing Strategically in an Interconnected World*, New York: Wiley, pp.119-148.
- Almeida, P. and Phene, A. (2004), Subsidiaries and Knowledge Creation: the Influence of MNC and Host Country on Innovation, *Strategic Management Journal*, 25, pp. 847-864.
- Ambrosini, V. and Bowman, C. (2001), Tacit Knowledge: Some Suggestions for Operationalisation, *Journal of Management Studies*, 38 (6), 811-829.
- Anfara, V. A. Jr., Brown, K. M. and Mangione, T. L. (2002), Qualitative Analysis on Stage: Making the Research Process more Public, *Educational Researcher* 31/1: 28-38.
- Anthony, R. N. (1965), *Planning and Control Systems: A Framework for Analysis*, Boston: Harvard University Graduate School of Business Administration.
- Aram, J. and Salipante, P. (2003), Bridging Scholarship in Management: Epistemological Reflections, *British Journal of Management*, 14, pp.189-205.
- Ashton, D., Brown, P. and Lauder, H. (2008 in press), Developing a Theory of Skills for Global HR (2008), in Sparrow, P.R. (Ed.) *Handbook of International HR Research: Integrating People, Process and Context*, Oxford: Blackwell.
- Ashton, P. (1995), *The Impact of Learning and Teaching Styles in Vocational Preparation*. International Forum on Design Management. Paris.
- Ashton, P., Deng J.Y. (2006), An Investigation of the Transferability of Design Management Education from the UK to China, D2B - The 1st International Design Management Symposium: Shanghai 2006.
- Asia Times (2005), "China to overtake Japan by 2020", September 28, 2005.
- Baker, M. (2001), Selecting a Research Methodology, *The Marketing Review*, 1pp:373-397.
- Baker, M. (2002), Research Methods, *The Marketing Review*, 3: 167-193.
- Baker, M. (2007a), BBC News Channel, <http://news.bbc.co.uk/1/hi/education/7098561.stm>.
- Baker, M. (2007b), *The Challenges of Design Thinking*, Inter-Sections 2007 conference, Newcastle, UK (London: Design Council, 2007).

- Barefield, R.M. and Young, S.M. (1988), *Internal Auditing in a Just-in-Time Environment*, Altamonte Springs, The Institute of Internal Auditors, FL.
- Barley, S. R. (1990), *Images of Imaging: Notes on doing longitudinal field work*, *Organization Science*, 1 pp: 220 – 247.
- Barron, F. (1988), *Putting Creativity to Work*, in R. J. Sternberg (ed.), *The Nature of Creativity*, New York: Cambridge University Press.
- Barnlund, D. (1989), *Communicative Styles of Japanese and Americans; Images and Realities*, Belmont: Wadsworth.
- Bassanini, A. and Scarpetta, S. (2001), *The Driving Forces of Economic growth: Panel data evidence for the OECD countries*, *OECD Economic Studies*, No. 33, 2001/II, pp.10-56;
- Berkowitz, S. (1997), *Analyzing Qualitative Data*, in J. Frechtling and L. Sharp (Eds.), *User-friendly Handbook for Mixed Method Evaluations*, Directorate for Education and Human Resources nsf.
http://www.ehr.nsf.gov/EHR/REC/pubs/NSF97-153/CHAP_4.HTM.
- Bennett, M. (2004), *Notes on the Measurement of Cultural and Intercultural Phenomena*, The Intercultural Communication Institute (forum).
http://www.indik.de/Aktuelles/papers/Notes_on_the_Measurement1_.pdf.
- Bennis, W. and Nanus, B. (1985), *Leaders: The strategies for taking charge*, New York: Harper and Row.
- Best, K. (2006), *Design Management: Managing Design Strategy, Process and Implementation*, AVA Publishing.
- Bhagat, Rabi S., Harveston, PD. and Triandis, HC. (2002), *Cultural Variations in the Cross-Border Transfer of Organizational Knowledge: an integrative framework*, *Academy of Management Review*, 27 (2), pp.204-221.
- Biggs, J. (2003), *Teaching for Quality Learning at University*, Buckingham: The Society for Research into Higher Education and the OUP.
- Black, M. (1983a), *Design Education in Great Britain*, in A. Blake (Eds.), *The Black Papers on Design*, Oxford: Pergamon Press.
- Black, M. (1983b), *Engineering and Design Education*, in A. Blake (Eds.), *The Black Papers on Design*, Oxford: Pergamon Press.
- Blackburn, R.S. and Chapin, D. (1994), *Design and Management Education: Collaboration between Practice and Academia*, *DMJ Vol 5*, Issue 4, pp.47-54, fall 1994.

Blaich, R. (1988), From Experience – Global Design, *Journal of Product Innovation Management*, Vol. 5 No.4, pp.296-310.

Blaich, R. and Blaich, J. (1993), *Product Design and Corporate Strategy: Managing the Connection for Competitive Advantage*, New York: McGraw-Hill, pp.107-108.

Boland, R.J. (2011), On Managing as Designing, in R. Cooper, S. Junginger, and T. Lockwood (Eds.), *The Handbook of Design Management*, Berg Publishers.

Bond, M H and Akhtar, H. (1987), Chinese Values and the Search for Culture-Free Dimensions of Culture, *Journal of Cross-Cultural Psychology*, 18 (2), pp.143-64.

Borja de Mozota, B. (2002), Design and Competitive Edge: A model for Design Management Excellence in European SMEs, *Design Management Journal, Academic Review*, vol. 2. Boston: Design Management Institute.

Borja de Mozota, B. (2003), *Design Management: Using Design to Build Brand Value and Corporate Innovation*, New York: Allworth.

Borja De Mozota, B. and Dong, H. (2009), Towards a Theory of Design Management: Can theoretical Models Define Its Territory? A Trans-cultural Conversation between Design and Management, *Design 2 business 2009*, and Tsinghua International Design Management Symposium, Beijing, China. pp. 362—370.

Bourner, T. and Flowers, S. (2001), Teaching and Learning Methods in Higher Education: a glimpse of the future. <http://www.bbk.ac.uk/asd/bourne.htm>.

Bouchard, T. J., Jr. (1976), Field Research methods: Interviewing, questionnaires, participant observation, systematic observation, unobtrusive measures, in M. D. Dunnette (Eds.), *Handbook of industrial and organizational psychology*: 363–413, Chicago: Rand McNally.

Bowers, R. (Ed.). (1987), *Language Teacher Education: An Integrated Programme for EFL Teacher Training*, London: Modern English Publications in association with the British Council, *ELT Documents* 125.

Brandenburg, U. and Zhu, J. (2007), Higher Education in China in the Light of Massification and Demographic Change: Lessons to be Learned for Germany, *CHE*, October 2007.

Branine, M.(1996), Observations on Training and Management Development in the People’s Republic of China, *Personnel Review*, Vol. 25,No.1, 1996, pp. 25-39.

Bradsher, K. (2006), China to Pass U.S. in 2009 in Emissions, New York Times, 7 November 2006.

Brannen, J. (2000), Combining Qualitative and Quantitative Approaches: an Overview, *Mixing Methods: Qualitative and Quantitative Research*, Ashgate.

Brinkley, I. (2008), *The Knowledge Economy: How Knowledge is Reshaping the Economic Life of Nations*, London: The Work Foundation.

Brouthers, Keith D. (1995), *Strategic Alliances: Choose Your Partners*, *Long Range Planning*, 28, 18-25.

Brown, T. (2008), Design Thinking. *Harvard Business Review* June 2008, 1-9.

Brown, T. (2007), Strategy by Design. *FastCompany.com*, 19.12.2007. <http://www.fastcompany.com/magazine/95/design-strategy.html>

Brown, K, Schmied, H and Tarondeau, J. (2002), Success Factors in R&D: A meta-analysis of the empirical literature and derived implications for design management, *Design Management Journal*, Academic Review.

Bruce, M. (1996), Challenges and Trends Facing the UK Design Profession, *Technology Analysis & Strategic Management*, vol. 8, no. 4 (1996), p. 407.

Bruce, M. and Bessant, J. (2000), *Design in Business-Strategic Innovation through Design*, Harlow: Prentice Hall.

Bruce, M. and Cooper, R. (1997), *Marketing and Design Management*, London: International Thomson Business Press.

Bryman, A. (1992), *Charisma and Leadership in Organizations*, London: Sage.

Bryman, A. (2001), *Social Research Methods*. Oxford, Oxford University Press.

BSI education website on BS 7000, (2011), Retrieved 20/09/2011, <http://www.bsieducation.org/Education/HE/subjects-standards/design-management/design-management.shtml>

Buchanan, R. (2001), The Problem of Character in Design Education: Liberal arts and professional specialisation', *International Journal of Technology and Design Education*, 11: 1, pp. 13–26.

Buchanan, R. et al. (eds) (1998), *Doctoral Education in Design: Proceedings of the Ohio Conference*, Ohio, the United States, 8–11 October, The School of Design, Carnegie Mellon University: Pittsburgh.

Buchanan, R. (2004), Human-centred Design: Changing Perspectives on Design Education in the East and West, *Design Issues*, Winter 2004, Vol. 20, No. 1, Pages 30-39 Posted Online March 13, 2006.

Burrell, G. and Morgan, G. (1979), *Sociological Paradigms and Organisational Analysis: Elements of the Sociology of Corporate Life*, London: Heinemann.

Burns, R. B. (2000), *Introduction to Research Methods* (4th ed.), Frenchs Forest, NSW: Pearson Education Australia.

Burril, C.W. and Ledolter, J. (1999), *Achieving Quality through Continual Improvement*, New York, John Wiley.

BSI education website on BS 7000, (2011).

<http://www.bsieducation.org/Education/HE/subjects-standards/design-management/design-management.shtml>

BS7000-10, (2008), BRITISH STANDARD, Design management systems – Part 10: Vocabulary of terms used in design management, ICS 01.040.03, 03.100.01

Cai, J. (2009), The Research and Practice of Design Management course for MA programme, Design 2 business 2009, and Tsinghua International Design Management Symposium, Beijing, China.

Cai, J. (2011), The Evolution of Design and Design Management in China, in Cooper, R., Junginger, S. and Lockwood, T (Eds.), *The Handbook of Design Management*, Berg Publishers.

Cameron, R. (2009), A Sequential Mixed Model Research Design: design, analytical and display issues', *International Journal of Multiple Research Approaches*, vol. 3, no.2.

Cameron, R. and Miller, P. (2007), Mixed Methods Research: Phoenix of the paradigm wars, in *Proceedings of the 21st ANZAM Conference*, Australian & New Zealand Academy of Management, Sydney, Dec 2007.

Campbell, J. P., Daft, R. L. and Hulin, C. L. (1982), *What to Study: Generating and developing research questions*, Beverly Hills, CA: Sage.

Cao, SS. and Wang, ZR. (2009), On Design Management Programme in Design Education, Design 2 business 2009, and Tsinghua International Design Management Symposium, Beijing, China.

Chalmers, D. (1997), Flexible Delivery at the University of Queensland, *Teaching and Learning News*, 7(2), 1-2.

Charmaz, K. (2002), Qualitative Interviewing and Grounded Theory Analysis, in J. F. Gubrium and J. A. Holstein (Eds), *Handbook of interview research: Context & method*, Thousand Oaks: Sage.

- Charmaz, K. (2006), *Constructing Grounded Theory: A practical guide through qualitative analysis*, London: Sage.
- Chen, M. (1995), *Asian Management Systems*, New York, Thunderbird/Rutledge Series in International Management.
- Chen, W.H. and Lu, R.S.Y. (1998), A Chinese Approach to Quality Transformation, *International Journal of Quality and Reliability Management*, 15, pp. 72- 84.
- Cheng, X. (2000), Asian Students' Reticence Revisited. *System* 28/1, pp. 435-446.
- Chin, K. S., Pun, K. F. and Hua, H. M. (2001), Consolidation of China's Quality Transformation Efforts: A review, *International Journal of Quality and Reliability Management*, 18(8/9), pp. 836–853.
- Choi, Y.G. (2009), *A Comparative Study of National Design Policy in the UK and South Korea*, Lancaster University, PhD thesis.
- Chu, K.F. (1997), An Organisational Culture for Quality through Empowerment, *Proceedings of the 2nd International Conference on Quality and Reliability*, Hong Kong, September, pp. 19- 23.
- Clifford, J. and Marcus, G.D. (Eds.) (1986), *Writing Culture, The Poetics and Politics of Ethnography*, University of California Press, Berkeley, CA.
- CNAA, (1984), *Managing Design, an Initiative in Management Education*, CNAA.
- Coates, D.E. (2006), *People Skills Training: Are you getting a return on your Investment?* Copyright © 2006, Performance Support Systems, Inc.
- Cohen, S.G., Ledford, G.E. and Spreitzer, G.M. (1996), A predictive model of self-managing work team effectiveness, *Human Relations*, Vol. 49 No. 5, pp. 643-76.
- Cohen, W.M. and Levinthal, D.A. (1990), Absorptive Capacity: a new perspective on learning and innovation, *Administrative Science Quarterly*, Vol. 35, pp. 128-52.
- Cohen, L., Manion, L. and Morrison, K. (2001), *Research Methods in Education*, NY. Routledge.
- Constantine, A. (2001), Determinants of Organisational Creativity: a literature review, *Management Decision*, Vol. 39 Iss: 10, pp.834 – 841
- Contractor, F. J. and Lorange, P. (1988), *Cooperative Strategies in International Business*, USA: Lexington Books.

Cooper, R and Press, M. (1995), *The Design Agenda - A Guide to Successful Design Management*. Chichester: Wiley.

Cooper, R. (1993), *Managing Design: Directions in British Education*, DMJ, Summer 1993.

Corfield, K. G. (1979), *Product Design*, NEDO, England.

Cortazzi, M. and Jin, L. (1997), *Communication for Learning across Cultures*, in D. McNamara and R. Harris (Eds.), *Overseas students in higher education*, pp. 76-90, London. Routledge.

Costa, J. R. (1992), *What it all adds up to: Culture and alpha-numeric brand names*, *Advance in consumer research*. Provo, UT.

Coughlan, P. and Porkopoff, I. (2004), *Managing Change, by Design*, in Richard, J. and Boland, JR. (Eds.), *Managing as designing*, Stanford University Press.

Courtney, A. J. (1994), *Hong Kong Direction of Motion Stereotypes*, *Ergonomics*, 37(3).

Cox, G. (2005), *Cox Review of Creativity in Business: Building on the UK's Strengths*, London: Design Council.

Crane, A. (2000), *Corporate Greening as Amoralization*, *Organization Studies*, 21(4):673-696.

Creswell, J.W. (2003), *Research Design: Qualitative, Quantitative and Mixed Method Approaches*.

Creswell, J. W. (2005), *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research*, New Jersey: Merrill.

Creswell, J. (2007), *Qualitative Inquiry and Research Design: Choosing among the five approaches* (2nd ed.), Thousand Oaks, CA: Sage.

Creswell J.W. and Plano Clark V. (2007), *Designing and Conducting Mixed Methods Research*, Thousand Oaks CA: Sage.

Creswell, J. W. and Miller, D. L. (2000), *Determining Validity in Qualitative Inquiry*, *Theory into Practice*, 39(3), pp.124-131.

Cropley, (2001), *Creativity in Education and Learning, a guide for teacher and educator*, Routledge.

Cross, N. (2001), *Designerly Ways of Knowing: Design discipline versus design*, *Design Issues*, 17: 3, pp. 49–55.

Cullen, J.B. (2002), *Multinational Management: A Strategic Approach*, South-Western Publishers, Cincinnati, OH.

Czarniawska, B. (2004), *Narratives in Social Science Research*, London: Sage.
Dale, B.G. (1999), *Managing Quality*, 3rd Edition, Oxford, Blackwell.

Danish Design Centre (2003), *The Economic Effects of Design*, The National Agency for Enterprise and Housing, Denmark, Copenhagen. http://www.ebst.dk/file/1924/the_economic_effects_of_design.pdf.

DCAL, DE, DETI, DHFETE, (2004), *Unlocking Creativity: A Creative Region*.
http://www.dcalni.gov.uk/ContMan/includes/upload/file.asp?ContentID=697&file=c_23

Davenport, T. H. and Prusak, L. (1998), *Working knowledge*, Boston: Harvard Business school Press.

De Jong, A. (2006), *Coaching Ethics: Integrity in the Moment of Choice*, in Passmore, J.(Eds.), *Excellence in coaching: the industry guide*, London: Kogan Page.

De Long, D. W. and Fahey, L. (2000), *Diagnosing cultural barriers to knowledge management*, *Academy of Management Executive*, 14 (4), pp.113-128.

De Jong, J. and De Hartog, D. (2010), *Creativity and Innovation Management*, Blackwell Publishing Ltd.

Den Hartog, D. N. and Koopman, P. L. (2001), *Leadership in Organisations*, in N. Anderson, D. S. Ones, H. Kepir-Sinangil and C. Viswesvaran (Eds.), *International handbook of industrial, work & organizational psychology* (Vol. 2). London: Sage.

Delbecq, A.L. and Mills, P.K. (1985), *Managerial Practices and Enhanced Innovation*, *Organisational Dynamics*, Vol. 14 No. 1, pp. 24-34.

Deng, C.L. (2001), *Design Strategy: Product Design's Management tool and competitive weapon*, Asian Pacific Press, Taipei.

Deng J.Y. (2009), *Strategic, Operational and Innovative: Design Management in China at the Cutting Edge of the Business Environment*, D2B2 Tsinghua International Design Management Symposium, Beijing, China 2009. [In Chinese]

Denzin, N. K. (2001), *Interpretive Interactionism* (2nd ed.), London: Sage.

- Denzin, N. K. (2002), The Interpretive Process, in: Huberman, A. M. and Miles, M.B., The Qualitative Researcher's Companion, Thousand Oaks, California Sage, pp.349-366.
- Denzin, N. K., and Lincoln, Y. S. (Eds.) (2000), Handbook of Qualitative Research, Thousand Oaks, CA: Sage.
- Denzin, N.K. and Lincoln, Y.S, (2002), Handbook of Qualitative Research, 2nd ed., Thousand Oaks, CA, Sage.
- Design Council, (2005), Red Future Currents: Designing for a Changing Climate, Work in Progress. By Lookwood, M and Murry, R. Oct. 2005.
- Design Council, (2008), Designing Demand Review, Nov, 2008.
- Design Council, (2010a), Multi-disciplinary Design Education in the UK, Report and recommendations from the Multi-Disciplinary Design Network, case studies NOVEMBER 2010.
- Design Council, (2010b), Lessons from Asia, April 2010. Report on the multi-disciplinary design education fact-finding visit to South Korea and China.
- Design Council, (2010c), Multi-disciplinary Design Education in the UK, Report and recommendations from the Multi-Disciplinary Design Network Nov. 2010.
- DMI, (2010), Design Management Definition, Design Management Institute. http://www.dmi.org/dmi/html/aboutdmi/design_management.htm. Retrieved April 24, 2010.
- DMI viewpoints, (2010), An Insight into Design Management Education in the UK: lessons to be learned. Viewed at 14/05/2010.
- Dormer, P. (1993), Design Since 1945, Thames and Hudson, London.
- Doz, Y. L. and Hamel. G. (1998), Alliance Advantage, USA: Harvard Business School Press.
- DTI, (1999), White paper: 'Our competitive future: building the knowledge driven economy'.
- DTI, (2005), Creativity, Design and Business Performance, DTI economics paper No. 15, Nov. 2005.
- Dumas, A. (1990), Why Design is Difficult to Manage, Design Management, Architecture Design and Technology Press, London.
- Dumas, A and Mintzberg, H. (1991), Managing the form, function and fit of Design, DMJ, 2, pp.26-31.

Dunne, D. (2011), User-Centred Design and Design-Centred Business Schools, in Cooper, R., Junginger, S., and Lockwood, T. (2011), *The Handbook of Design Management*, Berg Publishers.

Durling, D. and Friedman, K. (Eds) (2000), *Doctoral education in design – foundations, for the future: Proceedings of the Conference, La Clusaz, France, 8–12 July*, Staffordshire University Press: Stoke-on-Trent, UK.

Durling, D. and Friedman, K. (2003), Guest Editorial – Best practices in Ph.D, education in design, *Art Design and Communication in Higher Education*, 1: 3, pp. 133–140.

Dyer, Jeffrey H. and Kentaro Nobeoka (2000), Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case, *Strategic Management Journal*, 21, 345-367.

Easterby-Smith, M., Thorpe, R. and Lowe A. (1991), *Meaning in Management Research: An Introduction* London: Sage 1991.

Easterby-Smith, M., Thorpe, R. and Lowe, A. (2004), *Meaning in Management Research (Second Edition Ed.)*.London: Sage Publications.

Edmondson, A. C. (1996), Learning from Mistakes is Easier Said than Done: Group and organisational influences on the detection and correction of human error, *Journal of Applied Behavioral Science*, 32: 5–28.

Edmondson, A.C. and McManus, S.M. (2007), Methodological Fit Management Field Research, *Academy of Management Review*, 2007, Vol. 32, No. 4, pp.1155–1179.

Eisenhardt, K. (1989), Building Theories from Case Study Research, *Academy of Management Review*, 14(4): 532-550.

Ellis, G. (1996), How Culturally Appropriate is the Communicative Approach? *ELT Journal* 50/3: 213-218.

English S. and MacLarty, E. (2010), The Three Headed Monster of Higher Education, CLTD 5th Annual Conference ‘Challenging the Curriculum’, 12-13 April 2010, Tiergarten Berlin.

Fang Hsieh, H. and Shannon, S.E. (2005), Three Approaches to Qualitative Content Analysis, Fooyin University, Kaohsiung Hsien, Taiwan University of Washington, Seattle.

Farr, M. (1965), Design Management. Why is it needed now? *Design Journal*, 38-39.

- Farr, M. (1966), Design Management. London.
- Feurer, R. Chaharbaghi, K. and Wargin, J. (1996), Developing Creative Teams for Operational Excellence, International Journal of Operation and Production Management, 16(1), pp.5-18.
- Fernandez, W. (2003), Metateams in Major Information Technology Projects: a grounded theory on conflict, trust, communication, and cost, PhD Thesis, Queensland University of Technology, Brisbane.
- Fernandez, W. (2004), The Grounded Theory Method and Case Study Data in IS Research: Issues and design, Information Systems Foundations Workshop: Constructing and Criticising, Canberra, viewed 2 May 2006.
<http://epress.anu.edu.au/infosytems/part-ch05.pdf>
- Festervand, T.A, Lumpkin, J.R. (2005), The Future of Graduate Education: What Doth Tomorrow Bring? Journal of College Teaching & Learning, October 2005, Volume 2, Number 10.
- Findeli, A. (2001), Rethinking Design Education for the 21st Century: Theoretical, Methodological, Design Issues: Volume 17, Number 1, winter 2001.
- Flowerdew, J. and Miller, L. (1995), On the Notion of Culture in L2 lectures. TESOL Quarterly 29/1: 345-373.
- Flynn, B. B., Zhao, X. and Roth, A (2007), The Myth of the Dragon: Operations management in today's China, Business Horizons (2007) 50, pp.177–183.
- Formosa, K., and Kroeter, S. (2002), Toward Design Literacy in American Management: A strategy for MBA programs, DMJ, summer 2002, DMI.
- Frey, J. and Fontana, A. (1994), The Group Interview in Social Research. The Social Science Journal, 28: 175-187.
- Friedman, K. (2004a), Of Course Design Pays: But Who Says So, And Why? Research Report for Design for Latvia, presented at the Design Research for Competitive Advantage Conference.
- Friedman, K. (2004 b), Design curriculum challenges for today's university. This paper formed the keynote presentation at 'Enhancing the Curricula: Exploring Effective Curricula Practices in Art, Design and Communication in Higher Education'. Centre of learning and teaching in Art and Design London.
- Friedman, K. (2010), Heuristic Reflections on Assessing Creativity in the Design Disciplines, Creativity, Design and Education: Theories, Positions and Challenges / Anthony Williams, Michael J. Ostwald and Hedda Haugen Askland (Eds.), pp. 171-180, Australian Learning and Teaching Council.

- Gallow, (2011), What is Problem-Based Learning? <http://www.pbl.uci.edu/whatispbl.html>
- Galbraith, J.K. (1999), *The Anatomy of Power*, Boston: Houghton Mifflin, 1983.
- Garud, R. and Nayyar, P.R. (1994), Transformative Capacity: continual structuring by intertemporal technology transfer, *Strategic Management Journal*, Vol. 15, pp. 365-85.
- Gemser, G. and Leenders, M. (2001), How Integrating Industrial Design Impacts on Corporate Performance, *Journal of Product Innovation Management*, Vol. 18, No. 1, pp. 28-38.
- Green, L., Briggs, B. and Lombardi (1998), What Makes a Designer Manger? A conversation with the Design Management Journal, *DMJ*, spring 1998, pp. 18-21.
- Greene, J. C., Caracelli, V. J. and Graham, W. F. (1989), Toward a Conceptual Framework for Mixed-methodE design, *Educational Evaluation and Policy Analysis*, 11: 255–274.
- Geert. K. and der Zwaal, J.V. (2006), *Design Management*, Amsterdam: Pearson Education Benelux. p. 451. ISBN 978-90-430-1172-3.
- Gillespie, B. (2002), *Strategic Design Management and the Role of Consulting – What is strategic design management and what role can and do consultants play in the strategic design management of organizations (MBA dissertation)*, Westminster: University of Westminster. pp. 78.
- Gimenez, M. E. (1989), Silence in the Classroom: Some thoughts about teaching in the 1980s, *Teaching Sociology* 17/1: 184-191.
- Glaser, B. G. and Strauss, A. L. (1999), *The Discovery of Grounded Theory: Strategies for qualitative research*, New York: Aldine de Gruyter.
- Glaser, B. G. (1992), *Basics of grounded theory analysis: Emergency vs forcing*, Mill Valley: Sociology Press.
- Glaser, B.G. (1998), *Doing Grounded Theory: issues and discussions*, Sociological Press.
- Glaser, B. G. and Strauss, A. L. (1967), *The Discovery of Grounded Theory: Strategies for qualitative research*, New York: Aldine de Gruyter.
- Glaser, B. (2001), *The Grounded Theory Perspective: Conceptualisation contrasted with description*, Sociology Press, Mill Valley, CA.

GLOBAL COMPETITIVENESS REPORT (2003/2004), World Economic Forum in collaboration with IESE Business School, and the support of Nissan Chair of Corporate Strategy and International Business/ Anselmo Rubiralta Center for Globalization and Business Strategy.

<http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CGlobal+Competitiveness+Report%5CGlobal+Competitiveness+Report+2003-2004>

Golafshani, N. (2003), Understanding Reliability and Validity in Qualitative Research, The Qualitative Report Volume 8 Number 4 December 2003, pp. 597-607.

<http://www.nova.edu/ssss/QR/QR8-4/golafshani.pdf>

Goleman, D. (1998), Working with Emotional Intelligence, New York: Bantam Books.

Goorha, P. and Mohan, V. (2010), Understanding Learning Preferences in the Business School Curriculum, Journal of Education for Business, v85 n3 p145-152.

Gorb, P. (1990), Design Management, London: Architecture Design and Technology Press.

Gorb, P. (1990), Introduction: What is design management, in P. Gorb (Eds.), Design Management: Papers from the London Business School, pp 1-12. London: Architecture Design and Technology Press.

Gornick, N. (2002), What's it Like out There? The value of industry-based research projects in a graduate curriculum, DMJ summer 2002, DMI.

Gu, W. P. and Xue, Q. Zh. (2004), Discussion on the Culture Integration in the Cross-border Mergers and Acquisitions, Foreign Economics & Management, Vol. 4.

Gubrium, J. F. and Holstein, J. A. (1997), The New Language of Qualitative Method, New York: Oxford University Press.

Guest, M. (2002), A Critical 'Checkbook' for Culture Teaching and Learning. ELT Journal 65/2: 154-161.

Guest, M. (2006), Culture Research in Foreign Language Teaching: Dichotomizing, stereotyping and exoticising cultural realities? http://www.spz.tu-darmstadt.de/projekt_ejournal/jg-11-3/beitrag/Guest1.htm.

Gummesson, E. (2003), All Research is Interpretive! Journal of Business and Industrial Marketing 18 (6/7): 482-492.

Hall, E.T. (1976), Beyond Culture, New York: Doubleday.

Hall, E.T. and Hall, M.R. (1987), *Hidden Difference—Doing Business with the Japanese*, Garden City, NJ: Anchor/Doubleday.

Hall, G.R., Johnson, R.E. (1970), Transfers of United States aerospace technology to Japan, in R. Vernon (Eds.), *The Technology Factor in International Trade*, National Bureau of Economic Research, New York, NY,

Handfield, R. B. and McCormack, K. (2005), What You Need to Know about Sourcing from China, *Supply Chain Management Review*, 9(6), pp.28–36.

Hands, D. (2009), *Vision and Values in Design Management*, AVA Publishing, SA.

Hantrais, Linda. (2009), *International comparative research: theory, methods and practice*, Basingstoke (England): Palgrave Macmillan.

Hart, S. J., Service, L. M. and Baker, M. J. (1989), Design Orientation and Market Success, *Design Studies*, 10(2), pp.103-111.

Harvey, F. (1997), National Cultural Differences in Theory and Practice---Evaluating Hofstede's national cultural framework, *Information Technology & People*, Vo.10, No.2, 1997.

Hayes, R.H. (1990), Design: Putting Class into World Class. *Design Management Journal* vol.1 no.2 (reprint #9012HAY08).

HEFCE, (2010), *Multi-disciplinary Design Education in the UK Eight Case Studies*. NOVEMBER 2010, Nov, 2010.

HEFCE, (2010/14), *Higher Education - Business and Community Interaction Survey 2008-09'* (HEFCE2010/14).
[http:// www.hefce.ac.uk/econsoc/buscom/hebci/](http://www.hefce.ac.uk/econsoc/buscom/hebci/)

Higgs, P., Cunningham, S. and Bakhshi, H. (2008). *Beyond the Creative Industries - Mapping the Creative Economy in the United Kingdom*, London: NESTA.

Higgins, J. M. (1994), *Creative Problem Solving Techniques: The Handbook of New Ideas for Business*, Florida, New Management Publishing Company, Inc.

HM Treasury, (2005), *Cox Review of Creativity in Business: building on the UK's strengths*. London: HM Treasury.

HMIE, (2006), *Emerging Good Practice in Promoting Creativity*.
<http://www.hmie.gov.uk/publication.asp>

- Ho, J. and Crookall, D. (1995), Breaking with Chinese Cultural Traditions: learner autonomy in English language teaching System, 23/2: 235-243.
- Hollins, B. (2008), British Standard: a personal view, Engineering Designer, 34 (2). pp. 16-18, March/April 2008.
- Hollins, B. (2002), Design Management Education: The UK Experience, DMI Review, Vol. 13, No. 3, summer 2002.
- Hougan, G. (2001), Design for Ethnic Groups and Cultures Framework and Methods.
- Holland, R., Kim, B.Y., Kang, B.K. and Borja de Mozota, B. (2007), Design education for successful cross-functional cooperation in NPD, Shaping the Future: 9th International Conference on Engineering and Product Design Education, (EPDE 2007).
- Hofstede, G. (1980), Culture's Consequences: International differences in work-related values. Beverly Hills, CA: Sage Publications.
- Hofstede, G. (1991), Cultures and Organisations: Software of the Mind, London, McGraw Hill.
- Hoecklin, L. (1995), Managing Cultural Differences: Strategies for Competitive Advantage, Wokingham, The Economist Intelligence Unit /Addison-Wesley Publishing.
- Hofstede, G. (1997), Culture and Organizations: Software of the Mind, McGraw-Hill Co., New York, NY.
- Hofstede, G. (2001), Culture's Consequences, International Differences in Work- Related Values, Sage Publications, Beverly Hills, CA.
- Holden,R. and Johnson, S.(2002), Employing Graduates in SMEs: towards a research agenda, Journal of Small Business and Enterprise Development, Vol 9. No 3.
- Honey, P. and Mumford, A. (1992), The Manual of Learning Styles, Maidenhead, Peter Honey.
- Hopkins, S. A., Nie, W. and Hopkins, W. D. (2004), A comparative study of quality management in Taiwan's and China's electronics industry, International Journal of Quality and Reliability Management, 21(4/5), pp.362–376.
- Hoppe, M. (1990), A Comparative Study of Country Elites: International Differences in Work-Related Values and Learning and Their Implications for Management Training and Development, Doctoral dissertation, School of Education, University of North Carolina, Chapel Hill.

Hu, G. (2002), Potential Cultural Resistance to Pedagogical Imports: The case of communicative language teaching in China, *Language, Culture and Curriculum* 15/2: 93-105.

Huang, W. (2007), Design Management: Innovation Origin of Chinese Enterprises, *China Visual* Jan 9, 2007 [In Chinese]

Hunter, M.G. and Tan, F.B. (2005), *Advanced Topics in Global Information Management*, Volume 4, Idea Group Publishing.

IBM Global Business Services, (2007), *Seizing Opportunities in China's Innovation Agenda*, The Global CEO Study Viewpoints © Copyright IBM Corporation.

IDES Network/ Learning and Teaching Scotland, (2004), *Creativity Counts — Portraits of Practice*.
<http://www.ltscotland.org.uk/creativity/files/portraitsofpracticelts2004.pdf>.

IPA (2009), *Social Media Futures: the future of advertising agencies in a networked society*, A 10 year perspective.

Jeffcutt, P. and Pratt, C.A. (2002), *Managing Creativity in the Cultural Industries*, Editorial, Blackwell 2002.

Jerrard, R. and Hands, D. (2007), *Design Management Exploring Fieldwork and Applications*. Routledge.

Jerrard, R., Hands, D. and Ingram, (2002), *A Handbook of Design Management Case Studies*, Routledge Taylor Francis, London.

Jevnaker, B. (1999), *Integrated Product Innovation: Dilemmas of Design Expertise and It Management*, Proceedings of the Third Conference: Design Cultures, Salford, UK, March 30th-April 1st.

Jick, T. D. (1979), *Mixing Qualitative and Quantitative Methods: Triangulation in action*, *Administrative Science Quarterly*, 24: 602–611.

Johnson, B. R. (1997), *Examining the Validity Structure of Qualitative Research*, *Education*, 118(3), 282-292.

Johnson, J. M. (2002), *In-depth Interviewing*, in J. F. Gubrium and J. A. Holstein (Eds.), *Handbook of Interview Research: Context and method*, pp. 103–119, Thousand Oaks, CA: Sage.

Johnson, R.B. and Onwuegbuzie, A.J. (2004), *Mixed Methods Research: A research paradigm whose time has come*, *Educational Researcher* 33(7):14-26, 2004, 17.

Juodaitytė, (2007), Research Methods Applied in Doctoral Dissertations in Education Science (1995-2005): Theoretical and Empirical Analysis, Research on Vocational Education and Training, Berufsbildungsforschung.

Kaplan, R. (1966), Cultural Thought Patterns in Intercultural Education. Language Learning 16/1: 1-20. in K. Bailey and D. Nunan (Eds.), Voices From the Language Classroom (pp. 145–167). Cambridge: Cambridge University Press.

Karjalainen, TM. and Markku, S. (2008), Do Offerings Meet Requirements? Educating T-shaped professionals in strategic design management, Design Thinking: New Challenges for Designers, Managers and Organisations, ESSEC Business School, Cergy-Pointoise, France: DMI conference. 14–15 April, 2008. <http://www.dmi.org/dmi/html/conference/academic08/papers/Karjalainen/DMI%202008%20TMK&MS%20Final.pdf>.

Kelly, U., McLellan, D. and McNicoll, I. (2009), The Impact of Universities on the UK Economy: Fourth report, Universities UK. <http://www.universitiesuk.ac.uk/Publications/Pages/ImpactOfUniversities4.aspx>

Kefallonitis, E.G. (2007), Foolproof Design Management Education, Design Management Review, Vol.18, Issue 3, pp. 23-28, summer 2007.

Kimbell, L. (2011), Manifesto for the M(B)A in Designing Better Futures, in Cooper, R., Junginger, S., Lockwood, T. (2011), The Handbook of Design Management, Berg Publishers.

Kitson, M., Howells, J., Braham, R. and Westlake, S. (2009), The Connected University – Driving Recovery and Growth in the UK Economy, NESTA Research Report, April 2009.

Klingelfuss, M.J.(2009), Learning Styles and National Culture; an Overseas Research Project on Chinese Students in UK HE, A dissertation submitted to The University of Manchester for the degree of MA TESOL in the Faculty of Humanities.

Kogut, B. and Zander, Udo. (1997), Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology, in Resources, Firms and Strategies, Nicolai, O. Foss, ed.

Kolb, D. (1984), Experiential Learning, Experience as the Source of Learning and Development. Prentice Hall.

Kootstra, K.L. (2009), The Incorporation of Design Management in Today's Business Practices: An analysis of design management practices in Europe 2009, DME Survey.

- Koppelman, Udo. (1993), *Produktmarketing: Entscheidungsgrundlage für Produktmanager*. Berlin: Springer-Verlag. p. 65. ISBN 978-0387559865.
- Kostova, T. (1996), *Success of the Transnational Transfer of Organisational Practices within Multinational Corporations*, Doctoral Dissertation, University of Minnesota, Minneapolis, MN.
- Kotler, J. (1998), *Marketing*, Prentice Hall Australia Pty Ltd.
- Kotter, J. (1990), *A Force for Change: How leadership differs from management*, New York: Free Press.
- Kozulin, A. (1998), *Psychological Tools: A Sociocultural Approach to Education*, Cambridge, Mass; London, Harvard University Press.
- Krippendorff, K. (1980), *Content Analysis: An Introduction to Its Methodology*, Newbury Park: Sage.
- Kvale, S. (1996), *Interview: An introduction to qualitative research interviewing*, London: Sage.
- Kwong, J. (1996), *The New Educational Mandate in China: Running Schools, Running Business*. *International Journal of Educational Development*, 16,2.
- Kyung Won Chung (1998), *The Nature of Design Management: Developing a Curriculum Model*, *Design Management Journal*, Vol. 9, No.3, Summer 1998.
- Lambert, R. (2008), *Reasons to be Cheerful?* in *Business Voice*, December / January 2008.
- Lazarsfeld, P. F. (1944), *The Controversy over Detailed Interviews—an offer for negotiation*. *The Public Opinion Quarterly*, 8, (Bobbs-Merrill reprint series in the social sciences, pp. 38–60, published by the College Division).
- Learning and Teaching Unit Teaching in Higher Education (UniSA), <http://www.unisa.edu.au/academicdevelopment/design/objectives.asp>,
- Lee, D. J., Pae, J. H. and Wong, Y. H. (2001), *A Model of Close Business Relationships in China (guanxi)*. *European Journal of Marketing*, 35(1/2), 51.
- Lee, T. W., Mitchell, T. R. and Sablynski, C. J. (1999), *Qualitative Research in Organisational and Vocational Psychology, 1979 –1999*. *Journal of Vocational Behavior*, 55, pp.161–187.
- Legard, R., Keegan, J. and Ward, K. (2003), *In-depth Interviews*, in J. Ritchie & J. Lewis (Eds.), *Qualitative research practice* (pp. 138–168). Thousand Oaks, CA/London: Sage.

- Leung, T. K. P., Lai, K. H., Chan, R. Y. K. and Wong, Y. H. (2005), The Roles of Xinyong and Guanxi in Chinese Relationship Marketing. *European Journal of Marketing*, 39(5/6), pp. 528–559.
- Li, J. H., Anderson, A. R. and Harrison, R. T. (2003), Total Quality Management Principles and Practices in China, *International Journal of Quality and Reliability Management*, 20(8/9), pp. 1026–1050.
- Li, P. (2000), Challenging Education System in the New Century: Trends and Future, in: Ru Xin et al. (Eds.), *The Analysis and Forecast of Social Development in China Year 2000*, Beijing: Chinese Academy of Social Science Press. [In Chinese]
- Lianqing, Q. (1996), China's Higher Education under Reform. *International Journal of Education Management*, pp. 17-20.
- Liberatore, R.L. (1993), The Culture Factor and Quality, *Quality Progress*, December, pp. 61- 63.
- Lincoln, Y. and Guba, E. (1985), *Naturalistic Inquiry*, New York: Sage.
- Littrell, R. F. (2002), Desirable Leadership Behaviours of Multi-culture Managers in China, *Journal of Management Development*, Vol. 21, No. 1,2002, pp.5-74.
- Littlewood, W. (2000), Do Asian Students Really Want to Listen and Obey? *ELT Journal* 54/1, pp. 31-35.
- Liu, D. (2001), *Asian Students' Classroom Communication Patterns in US Universities – An perspective*. Westport: Ablex.
- Liu, G. Y. (2006), *Design Management*, Shanghai Jiaotong University Publishing House. [In Chinese]
- Liu, G.Z. (2009), Original Design and Innovation for “Industrial Chain” of Industrial China, *Design 2 business 2009*, and Tsinghua International Design Management Symposium, Beijing, China. [In Chinese]
- Liu, J.K. and Zhan, M.X. (2008), Reflection on Design Management Education in China, A Review of the Future Development of Design Management Education in China and the Relevance of the MBA, *DMJ*, Vol.3, 2008, Design Management Institute, US.
- Lockwood, T. (2005), *Integrated Design Management: An investigation into the management of design in companies which demonstrate visual design coherency*, PhD thesis, University of Westminster Harrow Business School London, UK 27 August 2005.

- Lofland, J. and Lofland L. H. (1995), *Analyzing Social Settings [Introduction for qualitative social scientific research]* (3rd ed.). Belmont, CA: Wadsworth.
- Lombardi, M. (2007), *Authentic Learning for the 21st Century: An Overview in Education Learning Initiative*.
<http://www.educause.edu/ir/library/pdf/ELI3009.pdf>
- London. (2007), *Background Document, BA (Hons) Programmes, (Re) validation Event*. London: Regents Business School London.
- Loughrin-Sacco, M. L. (1992), *More Than Meets the Eye: An ethnography of an elementary French class*, *Canadian Modern Language Review* 49/1: 80–101.
- Lubart, T.I. (1990), *Creativity and Cross-cultural Variation*, *International Journal of Psychology* 25 (1990) 39-59, North-Holland.
- Lucas, L.M. (2006), *The role of Culture on Knowledge Transfer: the case of the multinational corporation*, *The Learning Organisation* Vol. 13 No. 3, 2006 pp. 257-275, Emerald Group Publishing Limited.
- Lundin, R. (1997), *Flexible Delivery: an international perspective*. Initiatives in Flexible Delivery Conference, TEDI, University of Queensland, Brisbane.
http://www.tedi.uq.edu.au/conferences/flex_delivery/Lundin.html
- Lundvall, B.A. and Johnson, B. (1992), *National Systems of Innovation*, Frances Pinter, London.
- MacDonald, N. (2006), *Competitiveness Summit '06: A Review from the UK Design Council*. Retrieved 5 March 2008, from
http://www.core77.com/reactor/01.07_summit.asp
- MacKay, S. (2002), *Teaching English as an International Language: Rethinking Goals and Approaches*, Oxford: Oxford University Press.
- Madhavan, R, and Grover, R. (1998), *From Embedded Knowledge to Embodied Knowledge: New product development as knowledge management*, *Journal of Marketing*, 62(4), 1-12.
- Mahdon, M., Rüdiger, K., Brinkley, I. and Coats, D. (2007), *What You Get Is Not What You See Intangible Assets and the Knowledge, Economy* London: The Work Foundation, RBS.
- Malloy, T.H. and Gazzola, M. (2006), *The Aspect of Culture in the Social Inclusion of Ethnic Minorities*, A report undertaken for the European Commission by: The European Centre for Minority Issues (ECMI), Flensburg, Germany *Evaluation of the Impact of Inclusion Policies under the Open Method of Co-ordination: Assessing the Cultural Policies of Six Member States of the European Union, MEU Programme, Minorities in the EU*, Dec. 2006.

Manz, C.C. and Sims, H.P. Jr.(1986), Beyond imitation: complex behaviour and affective linkages resulting from exposure to leadership training models, *Journal of Applied Psychology*, Vol. 71 No. 4, pp. 571-8.

Marcoulides, G. A. (1998), *Modern Methods for Business Research*, NY: Lawrence Erlbaum Associates.

Margetson, D. (1994), Current Educational Reform and the Significance of Problem Based-Learning, *Studies in Higher Education*, 19, 1. pp. 5-19.

Margetson, D. (1997), Why is problem-based learning a challenge? in D. Boud and G. Feletti (Eds.), *The challenge of problem-based learning*, London: Kogan Page.

Martin and Tang, (2007), The Benefits from Publicly Funded Research, SPRU paper no. 161, June 2007.

Martins, E.C. and Terblanche, F. (2003), Building Organisational Culture that Stimulates Creativity and Innovation, *European Journal of Innovation Management*, Vol. 6 Iss: 1, pp.64 – 74.

Martinsons, M.G. (1994), Why Chinese Managers will not use MIS, Vancouver, Pacific Rim Institute for Studies of Management.

Martinsons, M.G. (1996), Cultural Constraints on Radical Re-engineering: Hammer and Lewin meet Confucius, *Journal of Applied Management Studies*, 5, pp. 85- 96.

Martinsons, M.G. and Hempel, P.S. (1995), Chinese Management Systems: historical and cross-cultural perspectives, *Journal of Management Systems*, 7, pp. 1- 11.

Marshall, C. and Rossman, G. B. (1995), *Designing Qualitative Research*. Thousand Oaks: Sage.

Mason, J. (2002), Qualitative Interviewing: Asking, Listening and Interpreting, in May, T. (ed) (2002), *Qualitative Research in Action*, Sage: London: 225-24.

Mason, R.M. (2003), Culture-Free or Culture-Bound? A Boundary Spanning Perspective on Learning in Knowledge Management Systems, *Journal of Global Information Management*, 11(4), 20-36, Oct-Dec 2003. Copyright © 2003, Idea Group Inc.

Mathison, S. (1988), Why Triangulate? *Educational Researcher*, 17(2), 13-17.

McBride, M. (2007), Design Management: Future Forward, *Design Management Review*, Summer, 2007.

- McGrath, J. E. (1964), Toward a “Theory of Method” for Research on Organisations. in W. W. Cooper, H. J. Leavitt and M. W. Shelly, II (Eds.), *New perspectives in organization research*: 533–547. New York: Wiley.
- McGregor, J. (2009), China’s Drive for ‘Indigenous Innovation’, *A Web of Industrial Policies*. APCO Worldwide.
- Mertens, D. M. (1998), *Research Methods in Education and Psychology: Integrating Diversity with Quantitative and Qualitative Approaches*. London: Sage.
- Meyer, A. D. (1982), Adapting to Environmental Jolts. *Administrative Science Quarterly*, 27: 513–537.
- Miles, M. B. and Huberman, A. M. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, Thousand Oaks, CA: Sage.
- MillValley, C.A., Glesne, C. and Peshkin, A. (1992), *Becoming Qualitative Researchers: An Introduction* White Plains, NY: Longman.
- Miller, T. R., Baird, T., Littlefield, C. M., Kofinas, G. Chapin, F. S. III, and Redman, C. L. (2008), Epistemological Pluralism: Reorganizing Interdisciplinary Research Ecology and Society 13(2): 46, <http://www.ecologyandsociety.org/vol13/iss2/art46>
- Mills, M., Gerhard G., van de Bunt and Jeanne de Bruijn (2006), Comparative Research Persistent Problems and Promising Solutions, *International Sociology*, September 2006, Vol 21(5): 619–631, SAGE (London, Thousand Oaks, CA and New Delhi)
- Ministry of Education of P.R.C., (2006), <http://202.205.177.9/edoas/website18/98/info22998.htm>
- Mintzberg, H. and Dumas, A. (1991), Managing the Form, Function and Fit of Design, *Design Management Journal* 2(3), 26-31.
- Misumi, J. (1985), *The Behavioural Science of Leadership, An Interdisciplinary Japanese Research Program*, University of Michigan Press, Ann Arbor, MI.
- Möller, Kristian, Svahn, Senja and Rajala, Arto. (2002), Network Management as a Set of Dynamic Capabilities, EURAM 2002 Conference, Stockholm.
- Mok, K. H. (1996), Marketisation and Decentralization: Development of Education and Paradigm Shift in Social Policy, *Hong Kong Public Administration*, 5, 1.

Mok, K. H. and Chan, D. (2001), Educational Development and the Socialist Market in Guangdong, *Asia Pacific Journal of Education*, 21, 1.

Morgan, G. (1980), Paradigms, Metaphors, and Puzzle Solving in Organisational Theory, *Administrative Science Quarterly*, 25, 605-622.
Morgan, Gareth.

Morgan, G. and Smircich, L. (1980), The Case for Qualitative Research. *Academy of Management Review*, 5: 491–500.

Morgan, K. (1995), The Learning Region: institutions, innovation and regional renewal, papers in planning research, No 157, Department of City and Regional Planning, Cardiff, University of Wales.

Moultrie, J. and Fraser, P. (2004), Better product design: Assessing and improving product design capability, Institute for Manufacturing, University of Cambridge.

Muthoo, A. (1999), *Bargaining Theory with Applications*, Cambridge, UK: Cambridge University Press, 1999.

Nakata, C. and Sivakumar, K. (2001), Instituting the Marketing Concept in a Multinational Setting: The Role of National Culture, *Journal of the Academy of Marketing Science*, 29(3), 255-75.

National Bureau of Statistics, China, (2005).
<http://210.72.32.6/cgi-bin/bigate.cgi/b/g/g/http@www.stats.gov.cn/tjsj/ndsj/2005/indexch.htm>

NESTA, (2010), Multi-Disciplinary Design Education in UK, NESTA, Nov 2010.

NESTA Research Report, April, (2009), The Connected University – Driving Recovery and Growth in the UK Economy.
<http://www.nesta.org.uk>

Neuman, W. (2006), *Social Research Methods: Qualitative and quantitative approaches* (6th Edn), Boston: Pearson.

Neuman, W. (2007), *Basics of Social Research, Qualitative and quantitative approaches* (2nd Edn), Pearson.

Newbury, D. (2003), Doctoral Education in Design, the Process of Research Degree Study, and the “Trained Researcher”, *Art Design and Communication in Higher Education*, 1: 3, pp. 149–159.

- Newell, S. (1999), The Transfer of Management Knowledge to China: building learning communities rather than translating Western textbooks? *Education +Training*, Volume 41, No 6/7, 1999, P286-293.
- Ng, R.M.C. (1998), Culture as a Factor in Management: the case of the People's Republic of China, *International Journal of Management*, 15, March, pp. 86- 93.
- Niglas, K. (2004), *The Combined Use of Qualitative and Quantitative Methods in Educational Research*, Tallinn, Estonia: Tallinn Pedagogical University. <http://www.tlulib.ee/files/arts/24/niglaf737ff0eb699f90626303a2ef1fa930f.pdf>
- Niglas, K. (2009), How the Novice Researcher can make sense of Mixed Methods Designs, *International Journal of Multiple Research Approaches* (2009) 3: 34–46.
- Nirma, K. (2001), *Generating and Exploiting Interdisciplinary Knowledge in Design*.
- Nonaka, (1994), The Concept of 'Ba': building a foundation for knowledge creation, *California Management Review*, Vol 27 No. 40.
- Norton, D.W. (1999), Communicating a User-Centered, Global Brand Voice: Global Brand Voice: The Impact of Information Architecture Research, *Design Management Journal*, winter, 1999.
- NURC, (2005), Tackling China's Energy Dilemma. UNDP China and the National Development and Reform Commission (NDRC) launch the China End-Use Energy Efficiency Programme. June 6, 2005. <http://www.undp.org.cn>
- Oakley, M. (ed.) (1990), *Design Management: a handbook of issues and methods*, Oxford: Blackwell.
- O'Brien Gillian, (2009), *From Corporate Social Responsibility to Corporate Responsible Behaviour: a Futures Approach: Proposing a New Conceptual and Operational Framework to Foster Responsibility within the Commercial Property Industry*, Doctoral Built Environment (Thesis), 1-1-2009 Dublin Institute of Technology, ARROW@DIT.
- OECD Report, (2007), *Moving UP the Value Chain: Staying Competitive in the Global Economy, Main Findings*. www.oecd.org/dataoecd/24/35/38558080.pdf
- Olins, W. (1985), *The Wolff Olins Guide to Design Management*, London: Wolff Olins. pp.37.

Olson, E., Slater, S. and Cooper, R. (2000), Managing Design for Competitive Advantage: a process approach, *Design Management Journal*, 11(4): 10–17.

Onwuegbuzie, A.J. and Leech, N. L. (2005), On Becoming a Pragmatic Researcher: The Importance of Combining Quantitative and qualitative Research Methodologies, *Social Research Methodology*, Vol.8, No.5, Month 2005, 375-387.

Onwuegbuzie A.J., Slate J.R., Leech N.L., and Collins K.M. (2007), Conducting Mixed Analyses: A general typology, *International Journal of Multiple Research Approaches* 1(1): 4-17.

Oppenheim, A. N. (1992), *Questionnaire Design, Interviewing and Attitude Measurement*, Continuum, London, 303 pp.

Pablos, P. (2004), Knowledge Flow Transfers in Multinational Corporations: knowledge properties and implications for management, *Journal of Knowledge Management*, Vol. 8 No. 6, pp. 105-16.

Pan, D. (2008), *NUS Handbook on Teaching*.
<http://www.cdnl.nus.edu.sg/handbook/teach/aims.htm>

Park, Y.Y. and Oxford, R. (1998), Changing Roles for Teachers in the English Village Course in Korea. *System* 26/1: 107/113.

Parkinson, M. (1999), *Securing Innovation and Creativity in Design Education, Higher Education Quality and Employability*. DFEE.

Pavitt, K. (1991), What Makes Basic Research Economically Useful? *Research Policy*, 20, pages 109–119.

Pearson, C. (1998), *The Hero Within*, San Francisco, CA: HarperCollins. Peck, M.S.

Pervaiz, K. A. (1998), Culture and Climate for Innovation, *European Journal of Innovation Management*, Vol. 1 Iss: 1, pp.30 – 43.

Piore, M. and Sabel, C. (1984), *The Second Industrial Divide*. Basic books, New York.

Pizzocaro, S. (2003), Re-orienting Ph.D. education in industrial design: some issues arising from the experience of a Ph.D. programme revision, *Art Design and Communication in Higher Education*, 1: 3, pp. 173–181.

Polanyi, M. (1966), *The Tacit Dimension*, Garden City, New York : Doubleday & Company, Inc.

Popovic, V. and Kim, T. (2001), Exploring emerging design paradigms. in ICSID Educational Seminar 2001, South Korea: Korea Institute of Design Promotion and International Council of Societies of Industrial Design.

Porter, L. W. (1988), Management Education and Development: Drift or Thrust into the 21st Century? McGraw-Hill Book Company.

Porter, M. (1990), The Competitive Advantage of Nations, Free Press, New York.

Porter, M. E. (1985), The Competitive Advantage, Creating and Sustaining Superior Performance. New York: Free Press.

Press, M. and Cooper, R. (2003), The Design Experience: The Role of Design and Designers in the Twenty-First Century, Aldershot: Ashgate Publishing Limited.

Pugh, S. (1991), Total Design: Integrated Methods for Successful Product Engineering. Addison Wesley, London.

Punch, K.F. (2000), Developing Effective Research Proposals. London: Sage Publications.

Pun, K. F. (2001), Cultural Influences on Total Quality Management Adoption in Chinese Enterprises: An empirical study, Total Quality Management, 12(3), 323–342.

Qian, Z, K (2007), from “Made in China” to “Designed in China”, Chinese Design Industry Association July 29, 2007.

Rahman, S. (2004), The future of TQM is past. Can TQM be resurrected? Total Quality Management, 15(4), pp.411-422.

Raulik-Murphy, G., Cawood, G., and Lewis, A. (2010), Design Policy: An Introduction to What Matters. DMJ, 2010, by DMI.

Redding, G. (1993), The Spirit of Chinese Capitalism, Berlin, Walter de Gruyter.

Rhodes, F.H. T. (2001), The Creation of the Future, The Role of the American University. Ithaca: Cornell University Press.

Richard, A. (2009), Deliberate Diversity: Cambridge and the UK Higher Education System. The annual address of the Vice-Chancellor, 1 October 2009. <http://www.admin.cam.ac.uk/offices/v-c/role/speeches/20091001.html>

Richards-Wilson, S. (2002), Changing the Way MBA Programmes Do Business - lead or Languish, Journal of Education for Business, 77(5), 296-300.

Ritchie, J. and Spencer, L. (2002), *Qualitative Data Analysis for Applied Policy Research*, in Huberman, A. M. and Miles, M. B., *The Qualitative Researcher's Companion*, Thousand Oaks, California: Sage.

Robson, C. (2002), *Real World Research: A resource for social scientists and practitioner-researchers*, Oxford: Blackwell.

Rogers, E. (1983), *The Diffusion of Innovation*, The Free Press, New York, NY.

Rossmann, G.B. and Wilson, B.L. (1985), Numbers and Words: Combining quantitative and qualitative methods in a single large-scale evaluation study, *Evaluation Review*, 9, 627-643.

Rouse, A. and Martin, D. (1994), The Use of NUDIST, a computerised analytical tool, to support qualitative information systems research, *Information Technology & People*, vol. 7, no. 3, pp. 50-62.

Rust, C. (2002), Context – Many Flowers, Small Leaps Forward: Debating doctoral education in design', *Art, Design and Communication in Higher Education*, 1: 3, pp. 141–148.

Sadowska, N. and Hull, J. (2008), Ways of Promoting Design Management in Business Education to Increase Creativity in Business Practice, A paper given at International DMI Education Conference: Design Thinking: New Challenges for Designers, Managers and Organizations. 14-15 April 2008, ESSEC Business School, Cergy-Pontoise, France.

Sale, J. E. M., Lohfeld, L. H. and Brazil, K. (2002), Revisiting the Quantitative-Qualitative Debate: Implications for mixed methods research, *Quality and Quantity*, 36: 45–53.

Salter, A. J. and Martin, B. R. (2007), The Economic Impacts of Basic Research: a critical review, *Research Policy* 30 2001. 509–532 and references within; Martin and Tang (2007), The Benefits from Publicly Funded Research, SPRU paper no. 161, June 2007.

Saner-Yiu, L. (2008), 高等教育治理的另類規範模式--標準的使用和中間獨立單位的参与, Paper presented at the OECD- China- Swiss Seminar on Governance Policy of Tertiary Education Development, 25th April – 2nd May 2008, Beijing and Guiyang, China. [In Chinese].

Sangeeta S., Banwet, D.K. and Karunes, S. (2004), Conceptualizing Total Quality Management in Higher Education, *The TQM Magazine*, Vol. 16 Iss: 2, pp.145 – 159.

Saunders, M., Lewis, P. and Thornhill, A. (2007), *Research Methods for Business Students 4e*, England: Pearson Education Ltd.

Schutt, R. K.(2006), *Investigating the Social World: The Process and Practice of Research*, London: SAGE Publications.

Schwandt, T. (2000), Three Epistemological Stances for Qualitative Inquiry: Interpretivism, Hermeneutics, and Social Constructionism, In Denzin, Norman and Lincoln, Yvonna (Eds.), *The Handbook of Qualitative Research (2nd Ed.)*, London: Sage: 189-213.

Schwandt, T. A. (1997), *Qualitative inquiry: A dictionary of terms*, Thousand Oaks: Sage.

Scollon, R.S. and Scollon, W. (1995), *Intercultural Communication*, Oxford: Blackwell.

Seale, C. (1999), Quality in Qualitative Research, *Qualitative Inquiry*, 5(4), 465-478.

Selmer, J. (2001), The preference for pre-departure or post-arrival cross-cultural training: An exploratory approach, *Journal of Managerial Psychology*, 16(1), 50-58.

Segev, E., Raveh, A. and Farjoun, M. (1999), Conceptual Maps of the Leading MBA Programmes in the United States: core courses, concentration areas, and the ranking of the school, *Strategic Management Journal*, 20, pp. 549–565.

Seliger, H. W. and Shohamy, E. (1997), *Second Language Research Methods (4th ed.)*, Oxford: OUP.

Shandong Province Educational Bureau, (Retrieved 01/09/2011). <http://www.sdpec.edu.cn/>

Shandong Economic Information Network, (Retrieved 01/09/2011). <http://www.sd.cei.gov.cn/>

Shang, Y. (2006), *Innovation: New National Strategy of China*, Ministry of science and Technology of the People's Republic of China, July 24, 2006. http://www.most.gov.cn/eng/pressroom/200608/t20060829_35696.htm

Silverman, D. (2001), *Interpreting Qualitative Data: Methods for Analysing Talk, Text and Interaction*, Sage: London.

Sinclair, J. and Collins, D. (1994), Towards a quality culture? *International Journal of Quality and Reliability Management*, 11, pp. 19- 29.

Skillset- UK, (2010), Strategic Skills Assessment for the Creative Industries. The Sector Skills Council for Creative Media. Skillset.

Smith, J. A. (1995), Semi-structured Interviewing and Qualitative Analysis In J.A.

Sotamaa, (2004). EU-Study: Design as a driver of user-centred innovation.

Sondergaard, M. (1994), Hofstede's Consequences: A Study of Reviews, Citations, and Replications, *Organisational Studies*, 15 (3), 447-56.

Song J., Almeida P. and Wu G. (2003), Learning by Hiring: When is mobility more to facilitate knowledge transfer? *Management Science*, 49(4): 351-365.

Spence, M. (1973), Job Market Signaling, *Quarterly Journal of Economics* (The Quarterly Journal of Economics, Vol. 87, No. 3) 87 (3): 355–374.

Spiggle, S. (1994), Analysis and Interpretation of Qualitative Data in Consumer Research, *Journal of Consumer Research*, 21: 491-503.

Spindler, G.D. and Spindler, L. (1983), Anthropologists View American Culture. *Annual Review of Anthropology* 12, 49-78, Creativity and Cross Culture Paper.

Spradley, J. P. (1979), *The Ethnographic Interview*. New York: Holt.

Sproull, L. S. (1986), Using Electronic Mail for Data Collection in Organisational Research, *Academy of Management Journal*, 29, 159-69.

Stamm, B. V. (2005), *Managing Innovation, Design Creativity*, Chichester: John Wiley & Sons Ltd.

Stake, R. (2002), Case Studies, in N. K. Denzin and Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*, 2nd ed., pp 435-454, Thousand Oaks: Sage.

Stemler, S. (2001), An Overview of Content Analysis, *Practical Assessment, Research & Evaluation*, 7(17).

<http://PAREonline.net/getvn.asp?v=7&n=17>

Stenbacka, C. (2001), Qualitative Research Requires Quality Concepts of its own. *Management Decision*, 39(7), 551-555.

Stogdill, R.M. (1974), *Handbook of Leadership: A Survey of the Literature*, Free Press, New York, NY.

Strauss, A. L. and Corbin, J. M. (1998), *Basics of Qualitative Research: Techniques and procedures for developing grounded theory*, 2nd. ed., Thousand Oaks, CA, Sage.

SUAD, (2008), <http://www.sdada.edu.cn/cumulus/ejieshao.php>

Sun, Q. (2010), Design Industries and Policies in the UK and China: A Comparison, DMJ.

Swann, C. and Young, E. (Eds.) (2000), Re-inventing Design Education in the University: Proceedings of the Perth Conference, Perth, Australia, 11–13 December, Curtin University of Technology: Perth.

Swann, P. and Birke, D. (2005), How do Creativity and Design Enhance Business Performance? A framework for interpreting the Evidence, DTI Think Piece, University of Nottingham Business School.

Swidler, A. (1986), Culture in Action: Symbols and Strategies, *American Sociological Review*, 51, 273-286.

Szeto, E. (2010), Framing an integrated framework of design curriculum in higher education: understandings, meanings and interpretations, *Art, Design & Communication in Higher Education* 9: 1, pp. 75–93.

Szulanski, G. (1996), Exploring internal stickiness: impediments to the transfer of best practice within the firm, *Strategic Management Journal*, Vol. 17, pp. 27-43.

Tashakkori, A. and Teddlie, C. (2003), *Handbook of Mixed Methods in Social and Behavioural Research*, Thousand Oaks, California: Sage.

Tether, B.S. (2005), The Role of Design in Business Performance, DTI Think Piece, CRIC, University of Manchester.

Tether, B., Mina, A., Consoli, D. and Gagliardi, D. (2005), A Literature Review on Skills and Innovation, How Does Successful Innovation Impact on the Demand for Skills and How Do Skills Drive Innovation, London, Department of Trade and Industry, HM Government, 2005.

The Leitch Report, (2006), <http://www.dcsf.gov.uk/furthereducation/uploads/documents/2006-12%20LeitchReview1.pdf>.

The Report of the Arts and Humanities Research Council, (2009), *Leading the World: the Economic Impact of UK Arts and Humanities Research*, June 2009.

The Report of the British Academy, (2004), *That Full Complement of Riches: the Contributions of the Arts, Humanities and Social Sciences to the Nation's Wealth*. January 2004.

The Report of Lord Sainsbury of Turville, (2007), and in several publications by Universities-UK. This University's contributions have been described in The Impact of the University of Cambridge on the UK Economy and Society, Library House Report, 2005.

The Russell Group Review, (2010), Submission to the Review of Higher Education Funding and Student Support, Jan. 2010, Russell International Excellence Group. Jan 2010.

The Sapir Report, (2003), Report of an Independent High-Level Study Group established on the initiative of the President of the European Commission. July 2003.

Tidd, J., Bessant, R. and Pavitt, K. (1997), Managing Innovation: integrating technological, market and organisational change, John Wiley & Sons, Ltd.

Tien, C.J., Ven, J.H. and Chou, S.L. (2003), Using the Problem Based Learning to Enhance Student's Key Competencies. Journal of American Academy of Business, Cambridge 2(2): 454.

TLRP, (2008), Education, Globalisation and the Knowledge Economy, A Commentary by the Teaching and Learning Research Programme. TLRP (September 2008).

http://www.tlrp.org/proj/phase111/assoc_brown.html

TLRP, (2009), Effective Learning and Teaching in UK Higher Education, A Commentary by the Teaching and Learning Research Programme, 2009. TLRP Material.

<http://www.tlrp.org/proj>

Tong, J. and Mitra, A. (2009), Chinese cultural influences on knowledge management practice, Journal of Knowledge Management, Vol. 13 Iss: 2, pp.49 – 62.

Topalian, A. (1980a), The Management of Design Projects, Associated Business Press. pp. 105–129.

Topalian, A. (1980b), Designers as Directors, Designer, February: 6–8.

Topalian, A. (1994), The Alto Design Management Workbook, London: Alto.

Toren, C. (1996), Ethnography: Theoretical Background, in Richardson, J. (ed) (1996) Handbook of Qualitative Research Methods for Psychology and the Social Sciences, The British Psychological Society: Leicester United Nations.

Industrial Development Organisation (2005), Corporate Social Responsibility Position Paper, Vienna, 2005.

- Tsang, E. (1999), Internationalisation as a learning process, *The Academy of Management Executive* Vol 13 No 1 91-99.
- Tse, D.K. (1998), Chinese Cultural Values and Management: issues and implications, *Better Management*, December, pp. 15- 19.
- Tsui, A. B. M. (1996), Reticence and Anxiety in Second Language Learning, in K. Bailey and D. Nunan (Eds.), *Voices from the language classroom* (pp. 145–167), Cambridge: Cambridge University Press.
- Tudor, I. (1998), Rationality and Rationalities in Language Teaching, *System* 26/3: 319-334.
- Turner, R. (2000), Design and Business: Who Calls the Shots? *Design Management Journal*. Fall 2000.
- Turner, R., Topalian, A. (2002), Core Responsibilities of Design Leaders in Commercially Demanding Environments, 2002, Inaugural presentation at the Design Leadership Forum.
- UNCTAD, (2005), The United Nations Conference on Trade and Development (UNCTAD) World Investment Report (2005). <http://www.unctad.org/Templates/Webflyer.asp?docID=6337&intItemID=2068&lang=1>
- UNDP, (2005), Tackling China's Energy Dilemma. UNDP China and the National Development and Reform Commission (NDRC) launch the China End-Use Energy Efficiency Programme. June 6, 2005. <http://www.undp.org.cn>
- University of Aberdeen (1997), Centre for Learning & Professional Development, University of Aberdeen 26/09/97, Retrieved 30/08/11. <http://www.abdn.ac.uk/admin/aimsofs.shtml>
- Veiga, J. et al. (2000), Measuring Organisational Culture Clashes: a two-nation post-hoc analysis of a cultural compatibility index, *Human Relations*, Vol. 53, pp. 539-57.
- Verganti, R. (2003), Design as Brokering of Languages: Innovation strategies in Italian firms. *Design Management Journal*, summer 2003.
- Verganti, R. (2006), Innovating Through Design, *Harvard Business Review* vol. 84.
- Walker, A., Bridges, E., and Chan, B. (1996), Wisdom Gained, Wisdom Given: instituting PBL in a Chinese culture, *Journal of Educational Administration* 34(5): 12.

Walton, G. L. (2009), Developing a New Blended Approach to Fostering Information Literacy, Doctoral Thesis, PhD of Loughborough University (May 2009).

Walton, T. (1992), The Once and Future World of Design Management Education, DMJ, summer 1992, DMI.

Walton, T. (1996), Gardening and the Art of Design Policy Making, Design Management Journal, Design and the National Agenda (Summer 1996) and Design and National Policy (Summer 1993). Vol 7, No. 3.

Weber, R. P. (1990), Basic Content Analysis (2nd ed.), Newbury Park: CA.

Werner and Schoepfle (1987), Systematic Fieldwork: Ethnographic Analysis and Data Management, Sage.

West, M.A. (2002), Sparkling Fountains or Stagnant Ponds: An Integrative Model of Creativity and Innovation Implementation in Work Groups, Applied Psychology: An International Review, 51, 355–87.

Willig, C. (2001), Introducing Qualitative Research in Psychology: Adventures in Theory and Method, Buckingham: Open University Press.

Williams, R. Cooper, et al. (2009), 2020 Vision—The UK Design Industry 10 Years On: Implications for Design Businesses of the Future, in Farnham, (2009), Designing for the 21st Century, Gower Publishing, vol. 2, T. Inns, ed., pp. 39-54.

Wingler, H.M. (2001), The Bauhaus (Cambridge: MIT Press, 1979), 44. Design Issues: Volume 17, 6 Number 1 winter 2001.

Winograd, T. A. (1997), From Computing Machinery to Interaction Design, Beyond Calculation: The next fifty years of computing, New York: Springer-Verlag.

Wolf, B., Davis, M., and Vogel, C. (2002), Perspectives from Inside the Ivory Tower, DMJ summer, 2002, DMI.

Wong, J. K. (2004), Are the Learning Styles of Asian International Students Culturally or Contextually based? International Education Journal 4/4: 154-166.

Wong, S.L. (1996), Chinese Entrepreneurs and Business Trust, in G.G. Hamilton (Eds.), Asian Business Networks (Berlin, Walter de Gruyter), pp. 13-26.

Wheelwright, S. C. and Clark, K B. (1992), Revolutionizing Product Development: Quantum leaps in speed, efficiency, and quality. New York: Free Press.

Xie, R. (2004), Investigations of Several Issues Concerning the Imbalance of Economic Developments: Comparison of economic and social developments of Pearl River Delta.

Xin, K.R. and Pearce, J.L. (1996), Guanxi: Connection as Substitutes for Formal Institutional Support, *Academy of Management Journal*, 39, pp. 1641-1658.

Xinhua Electronic News. (2007), Faster Assimilation of Imported Technologies Urged to Lower China's External Technology Reliance. January 8, 2007.

Xinhua Net (2002), March 4th, 2002.
http://news.xinhuanet.com/newscenter/2002-03/04/content_300026.htm

Xu, Z and Wang J. (2009), Application of ISO9000 Standard in the Quality Management of Graduate Education, Beijing University of Aeronautic and Astronautics, Beijing.

Yan, Y.T. (2006), Political Advisors Urge Scrutiny of Science Funds, QuanShan Government, 7-7-2006.
<http://www.xzqs.gov.cn/view.asp?id=11267>

Yauch, C. A. and Steudel, H. J. (2003), Complementary Use of Qualitative and Quantitative Cultural Assessment Methods, *Organizational Research Methods*, 6: 465–481.

Yang, M.M.H. (1994), Gifts, Favor and Banquets: The Art of Social Relationships in China, New York, Cornell University Press.

Yee, J. and MacLarty, E. (2010), Enabling a Community of Practice: Fostering social learning between Designers and Design Managers at Postgraduate Level., CLTD 5th Annual Conference 'Challenging the Curriculum' 12-13 April 2010 Tiergarten Berlin.

Yin, Q. and White, G. (1994), The Marketisation of Chinese Higher Education: A critical assessment, *Comparative Education*, 30, 3.

Yin, R. (1994), *Case Study Research: Design and methods* (2nd Ed.). Beverly Hills, CA: Sage Publishing.

Yin, R. (2003), *Case Study Research: Design and Methods* (3rd Ed.). Sage: London.

Yip, G.S. (1992), *Total Global Strategy: Managing for Worldwide Competitive Advantage*, Englewood Cliffs, NJ, Prentice Hall.

Yee, J. (2010), Models, Structures and Trends for Design Postgraduate Taught Programmes, School of Design, Northumbria University, for circulation between study participants.

Young, R.; MacLarty, E. and McKelvey, K. (2009), The Design Postgraduate Journeyman. Mapping the relationship between Design Thinking and Doing with Skills Acquisition for Skilful Practice, International Association of Societies of Design Research, Oct 18-22 2009 COEX Seoul, Korea.

Yong, S. (2006), Innovation: New National Strategy of China, Ministry of science and Technology of the People's Republic of China, July 24, 2006. http://www.most.gov.cn/eng/pressroom/200608/t20060829_35696.htm

Young, S.M. (1992), A Framework for Successful Adoption and Performance of Japanese Manufacturing Practices in the United States, Academy of Management Review, Vol. 17 No. 4, pp. 677-700.

Zamel, V. (1997), Toward a Model of Transculturation, TESOL Quarterly 31/2: 341-352.

Zhou, Y.Q. (2011), 走出做强中国高等教育的“新路子”, 中国高等教育学会会长周远清, 中国教育报.

Zhu, Q.F. (2000), Mass Consumption and Consumer Market in 1999, in: Ru Xin et al. The Analysis and Forecast of Social Development in China Year 2000, Beijing: Chinese Academy of Social Science Press. [In Chinese]

Zikmund, W.G. (2000), Business Research Methods (6th ed.), Orlando: Harcourt.

Zollo, M. and Winter, S.G. (2002), Deliberate Learning and the Evolution of Dynamic Capabilities, Organisation Science, 13, 339-351.

18 Views on the Definition of Design Management, (1998), Design Management Journal Volume 9, Issue 3, pages 14-19, Summer 1998.

**Postgraduate Design Management Education in China:
An Investigation into the Transferability of
Design Management Knowledge, Curricula, Teaching and
Learning Strategies from the UK to China**

Appendices

JIAN YE DENG

**Faculty of Arts, Media and Design
Staffordshire University**

**Submitted in Partial Fulfilment of Requirement of the Degree of
Doctor of Philosophy**

October 2011

Appendices

Appendix 1

Key Dates in the Contemporary Development of Higher Education and UK Universities	Appendix 1-1
Summary of the Course Content of Postgraduate Programmes in Design Management, UK	Appendix 1-2
Summary of the Teaching Aims and Objectives of Postgraduate Programmes in Design Management, UK	Appendix 1-3
Summary of the Learning Outcomes of Postgraduate Programmes in Design Management, UK	Appendix 1-4
Summary of the Teaching Methods of Postgraduate Programmes in Design Management, UK	Appendix 1-5
Summary of the Teaching Aim and Objectives in Postgraduate Design Management Courses in China	Appendix 1-6
Summary of the Course Content in Postgraduate Design Management Courses in China	Appendix 1-7
Summary of the Course Structure in Postgraduate Design Management Courses in China	Appendix 1-8
Summary of the Learning Outcomes and Teaching Methods in Postgraduate Design Management Courses in China	Appendix 1-9
MA Study in Engineering in Design Strategy in Kyushu University	Appendix 1-10

Appendix 2

Interview Questionnaire of Leading Academics both in the UK and China	Appendix 2-1
Interviews Questionnaire of Design/ Management Individuals in both Public and Private Sectors in China	Appendix 2-2
The Key Documents of the Higher Education and Design Management Related Policies Study between the UK and China	Appendix 2-3

Appendix 3

Interviews Transcripts of Leading Academics in the UK
.....Appendix 3-1

Interviews Transcripts of Leading Academics in China
.....Appendix 3-2

Interviews Transcripts of Design/ Management Individuals in both Public and
Private Sectors in China
.....Appendix 3-3

Appendix 4

CVs of Leading Academics in the UK
.....Appendix 4-1

Appendix 1-1:

Key Dates in the Contemporary Development of Higher Education and UK Universities (TLRP, 2009)^{UK Hd1}

1919, University Grants Committee (UGC) formed to support funding of universities.
1944, Education Act formulates a notion of equality of educational opportunity.
1966, Antony Crosland, Labour Secretary of State, makes speech on binary policy for HE.
1970, 30 Polytechnics created from Local Authority colleges of technology.
1972, James report on Teacher Education and Training commissioned by the Secretary of State for Education.
1986, Start of Research Assessment Exercise (RAE) for Universities.
1988, Education Reform Act created two UK funding councils, the Universities Funding Council (UFC) and the Polytechnics and Colleges Funding Council (PCFC).
1992, Further and Higher Education Act created new universities based upon former polytechnics; and Higher Education Funding Councils for the UK nations.
1994, Higher Education Quality Committee (HEQC) established by the bodies representing the universities and colleges to contribute to the maintenance and improvement of quality in UK institutions.
1994, Russell Group formed (at Hotel Russell in London) - member universities have medical schools and are research-intensive, including Bristol, Cambridge, Edinburgh, Manchester, Oxford, now composed of 20 UK universities.
1994, Group of 19 smaller pre-1992 Universities formed.
1997, The Quality Assurance Agency for Higher Education (QAA) established: independent assessment of how UK higher education institutions maintain their academic standards and teaching quality.
1997, Coalition of Modern Universities (CMU) formed based on former Polytechnics and university colleges.
1997, Dearing Report on Higher Education in the Learning Society.
1997, The Quality Assurance Agency for Higher Education (QAA) established: independent assessment of how UK higher education institutions maintain their academic standards and teaching quality.
2002, White Paper on the Future of Higher Education context utilising global expansion.
2004, Higher Education Academy (HEA) formed from a merger of the Institute for Learning and Teaching in Higher Education, the Learning and Teaching Support Network now includes 24 subject centres for specific subjects taught in HE.
2004, Higher Education Act and the introduction of student fees.
2007, Department of Innovation, Universities and Skills (DIUS) separated from the Department for Children, Families and Schools in UK Government, and takes on responsibility for research from the former Department of Trade and Industry. Its research role is UK-wide but its teaching role applies only to England.
2007, CMU renamed the Million+ universities' think-tank. It represents almost 30 UK universities.
2008, Incorporation of FE colleges and university colleges as universities providing foundation degrees.
2009, HEFCE's revised research strategies for equity and higher skills development.

Appendix 1-10:

MA Study in Engineering in Design Strategy in Kyushu University

Course Content	Aim of the Module	Teaching Resource	Module Contents
Design in business	Clarify the relationship between design and business around the design master's in business methods, training the basic quality of design and management personnel	Front line professional designers from different industries	The Principles of Product; Design Innovation; Design Integration; Brand Business Design; Design Project Management
The basic theory of design in commercial context	In the master design skills, based on the study design business knowledge, such as business management, intellectual property, international relations	Expertise from business, law, economics	Design Marketing; Design Consultant; Design Risk Management; Design Industry Circumstances ; Design Venture; Business Financial; Design Intellectual Property Rights; Design Intellect Future International Comparison; Presentation; International Communication; Internship
Advanced design	Learn by design professionals as necessary in the design and engineering knowledge, and design methodology	Design academics	Citizen-based Town Planning Design; Building Design; Life Space Design; Life Culture Design; Product Design; Function Engineering Design; Interactive Design; Listening Design; Digital Image Design; Event & Exhibition Design; Graphic Design; Strategic Tip Art Expression
Design management project	Through practice and application exercises, the combination of theory and practice to cultivate the sense of the project, driving force and executive ability	All	Universal Brand Experience Design; Industry Contents Design; Design Strategy

Appendix 1-2:

Summary of the Course Content of Postgraduate Programmes in Design Management, UK

University & Course Title	Course Content
Brunel University A: MA Design and Branding Strategy B: MA Design, Strategy and Innovation	Design Research, Creativity and Innovation, Design Management, Marketing Branding Strategy, Design Futures, major project and dissertation.
Staffordshire University MA Design Management	Professional development, Design leadership, Marketing context, Product/services development, Design Management, Design strategy, Innovation and Development, Design copyright, major project and dissertation.
Birmingham City University MA Design Management	Professional Practice; Entrepreneurship & Innovation; Sustainable Design Policy; Service Design; major project and dissertation.
De Montfort University A: MA/Msc Design Management B: Master of Design Innovation (MA/MSc/PGDip/PGCert) C: Design Entrepreneurship (MA/PGDip)	A: Research Methodology for Design Entrepreneurs; Critical Perspectives in Design Management, Integrated Brand Management; Service design; Strategic Markets for Design in the Global Economy, Design as a Strategic Business Tool +optional ; major project and dissertation. B: Research Methodology and Design Cultures; Sustainable Design, Museum and Exhibition Design, Advances in Lens-Based Media: Holographic Imaging, Business Planning for the Creative Entrepreneur or the Managing Business Web Presence. major project with three options: Detailed design; Design Concept; Dissertation. C: Research Methodology for Design Entrepreneurs, Marketing for the Creative Entrepreneur, Critical Perspectives in Design Management, Strategic Design for Competitive Advantage; Business Planning for the Creative Entrepreneur, Strategic Markets for Design in the Global Economy, Design as a Strategic Business Tool +optional ; major project and dissertation.
University of Salford A: MSc/PgDip Design Management B: MA International Business and management for Designers	A: Core: Design Industry, Design Strategy, Design Communication: Theory and Analysis, Research Methods. Optional: Organisational Behaviour, Project Management, Marketing Management, Consumer Behaviour, Strategic Management, International Business Environment Managing Finance, Plus several specialist, marketing modules. B: Strategic Management and Organisational Behaviour; Research Methods; International Marketing for Design; International Design Industry; Design and Brand Strategy; Professional Financial and Legal Issues in Design; Design Project Management; Design Context and Consumer Culture; Optional modules include: Creativity and Innovation; Research Methods for Creative Industries.

<p>University of the Arts London A: London College of Communication (LCC); MA /Postgraduate Diploma in Design Management * Discontinued B: Central Saint Martin College of Art and Design (CSM) MA Innovation Management</p>	<p>A: Design Management: Culture and Context; Design: Knowledge Management and Consumer Culture; Design Project Management; Design Management: a framework for Innovation. Research Methods; Strategic Design Management options: Interactive Advertising; Creativity and Innovation; Sustainable Design & Ethics in Brand Management; Globalisation and the Media. Major project on a Design Management topic or a problem selected by the student.</p> <p>B: Key texts in the discourses of innovation, business, design theory and innovation in relation to services, products and user experience's. Teamwork, rigorous use of different research methodologies, experimentation and risk-taking, as well as critical self- reflection and essay writing, identify and delivery creativity and innovation within both a lifestyle and business context. Identifies an issue in Innovation Management to investigate, with field research, a critical evaluative report, a feasibility assessment and an innovation forum/conference.</p>
<p>The University College for the Creative Arts A: MA Innovation & Brand Management B: MA Arts Management</p>	<p>A: Exploratory project; Research and communication methods; Theoretical discourse; Professional practice; Work placement opportunity; Final project culminating the ideas and concepts developed throughout the course.</p> <p>B: Customers communication and promotion; Research methods; Management imperative; Creative project management; Strategic innovation and brand engagement; Management final major project – self-directed research at an advanced level over an extended period of time.</p>
<p>Lancaster University (LICA) A: MA Design Management B: MA Sustainability, Innovation & Design</p>	<p>Core Modules are: Design Management; Design Thinking and Research Methods; Service Design; Design Strategy; Design, Sustainability and Contemporary Issues; Innovation and Design; Major Research Project.</p>
<p>Northumbria University MA Design Management</p>	<p>Core Modules are: MA design Project by Learning Contract M; Contemporary Influences; Creative Thinking Skills and Intellectual Property; Cross Culture Influences on Effective Collaboration; Research Principles; Reflective Practice; Commercialisation; Design Value; Global Strategy and Project Planning.</p>
<p>Centre for Competitive Creative Design (C4D) Design & Innovation for Sustainability MDes/PgDip/PgCert</p>	<p>Compulsory Modules: Concept Development and Prototyping; Design Driven Innovation; Strategic Communication and Brand Development; Managing Innovation and New Product Development; Principles of Sustainability; Programme and Project Management; Whole System Design ;</p> <p>Elective Module (select one); Environmental Regulation in Practice; Evaluating Sustainability; Creative Enterprise and Entrepreneurship.</p>
<p>Kingston University MA Design for Development</p>	<p>The course content focuses on building a road-map to get there. Study undertaking in a number of faculties and schools across the University. Core modules including Visioning a Sustainable World; Managing People & Organisations; Sustainable Design Principles, Perspectives and Practices; Leadership in the Creative Economy; and Major Design Research Project.</p>
<p>University of Wales Institute, Cardiff MBA Product Development Management</p>	<p>This specialist stream will provide students with a sound basis of the product design & development process by contextualising the product development process linking research, commercial and social drivers, concept development, design for manufacture, production, marketing and sales. In addition, the stream will equip students with the knowledge, skills and expertise necessary to plan, implement and manage a successful rapid product development (RPD) process.</p>
<p>Imperial College London, (Design London) Innovation, Entrepreneurship and Design course</p>	<p>Process of preparing a start-up; The concept of a commercial feasibility study; Market research and industry analysis; business model and business plan; entrepreneurial thinking and doing; user-centric design in communicating with customers; strategy to innovate.</p>

Appendix 1-3:

Summary of the Teaching Aims and Objectives of Postgraduate Programmes in Design Management, UK

University & Course Title	Course Aim & Objectives
Brunel University MA Design and Branding Strategy MA Design, Strategy and Innovation	Communicate and demonstrate the potential value of design and branding. Prepare students from design and other creative disciplines to design innovative strategies and act as a catalyst for change in the design, branding and related professions, businesses, education and other organisations.
Staffordshire University MA Design Management	Provide designers and others with skills, creativity and knowledge to exploit the value of the design process in business.
Birmingham City University MA Design Management	This course attracts both designers and non-designers and aims to enhance career prospects by gaining knowledge and skills in design management. This is an innovative and well-proven course that provides the opportunity to collaborate with external companies and organisations, including a six-week placement option.
De Montfort University MA/MSc Design Management Master of Design Innovation (MA/MSc/PGDip/PGCert) Design Entrepreneurship (MA/PGDip)	<p>The course examines international and global design and business issues, and develops specialist design management knowledge and skills.</p> <p>MA/MSc Design Innovation provides a framework for developing design skills in a professional management context. The design skills taught on the course are vital in an entrepreneurial, knowledge-based economy.</p> <p>This course provides a framework for developing design entrepreneurship skills in a professional management context. The skills taught and developed are vital in today's modern entrepreneurial and knowledge-based economy.</p>
University of Salford MSc/PgDip Design Management MA International Business and management for Designers	<p>It is concerned with the management of all aspects of business strategy that are delivered through design. It focuses on the strategic management of design within the broader parameters of organisational and marketing strategy.</p> <p>This programme is concerned with the management of all aspects of design-related businesses. It focuses on the strategic management of design – from governance to operational level – within the broader parameters of an international environment.</p>
University of the Arts London London College of Communication (LCC):MA /Postgraduate Diploma in Design Management *discontinued Central Saint Martin College of Art and Design (CSM): MA Innovation Management	<p>The course has been designed with the practitioner in mind, and seeks to emphasise the diversity of experience and address the diversity of aspirations of its students by encouraging critical and creative debate in a scholarly and academically rigorous context.</p> <p>It aims to bring together open-minded individuals from a diverse range of academic and professional backgrounds in order to promote new ways of thinking and doing that encourages creative collaborations in the pursuit of innovation.</p>

<p>The University College for the Creative Arts</p> <p>MA Innovation & Brand Management</p> <p>MA Arts Management</p>	<p>Consider the value of branding in today's competitive global environment as organisations continue to compete in overcrowded markets. To develop strategies for consumers needs through emotional attachment.</p> <p>The course is designed to enhance your ability to develop a portfolio of employable skills and experiences transferable to many creative industry sectors, both public and commercial.</p>
<p>Lancaster University (LICA)</p> <p>MA Design Management</p>	<p>The course explores and develops the ability to apply design knowledge and thinking in a range of contexts. It focuses on human-centred design thinking and methods in the context of organisational problems, which include management, strategy and policy.</p>
<p>Northumbria University</p> <p>MA Design Management</p>	<p>This study offers a unique insight into the value of design and innovation to organisations and how this can best be managed.</p>
<p>Centre for Competitive Creative Design (C4D)</p> <p>MDes Design & Innovation for Sustainability</p>	<p>Aims to address the engagement of design-led thinking with the business and social agenda for sustainable development. It is about rethinking and re engaging existing paradigms to stimulate new futures.</p>
<p>Kingston University</p> <p>MA Design for Development</p>	<p>Delivers a theoretical and practical understanding of the key sustainable design principles, perspectives and practices. Personal development and leadership underpin the course.</p>
<p>University of Wales Institute, Cardiff</p> <p>MBA Product Development Management</p>	<p>The study is to gain an understanding of the role of designers and engineers in a company and their interplay with other aspects of a company.</p>
<p>Imperial College London, (Design London)</p> <p>Innovation, Entrepreneurship and Design course</p>	<p>The IE&D course is as relevant to those fostering innovation within an organisation as it is to those planning to start their own business. It takes students on a live entrepreneurial journey, providing insights into the challenges of introducing novel products and services to market with a multidisciplinary approach..</p>

Appendix 1-4:

Summary of the Learning Outcomes of Postgraduate Programmes in Design Management, UK

University & Course Title	Assessment and Learning Outcomes
Brunel University MA Design and Branding Strategy MA Design, Strategy and Innovation	The course prepares students for work in the design field or for other roles in the emergent creative economy.
Staffordshire University MA Design Management	Equipped students to enter industry or consultancy as designer or design managers.
Birmingham City University MA Design Management	Understanding of the strategic role of design allows participants to develop their careers as designers or managers in consultancies, design and marketing departments, or in their own businesses.
De Montfort University MA/MSc Design Management Master of Design Innovation (MA/MSc/PGDip/PGCertificate); Design Entrepreneurship (MA/PGDip)	<p>It enables students to enter creative contexts at a high level of responsibility, ranging from small local businesses to multinational corporations and social enterprise. In order to respond to growth demands in the global cultural and creative industries.</p> <p>It enables students to enter creative contexts at a high level of responsibility, ranging from small local businesses to multinational corporations. Promotes professional and personal development of designers and design managers currently working in the industry.</p> <p>It enables students to operate effectively at a high level of executive responsibility in design, creative and digital media technology businesses. This course has a collaborative link with the Bauman Moscow State Technical University, the leading Russian technical university, which offers opportunities for innovative research projects.</p>
University of Salford MSc/PgDip Design Management; MA International Business and management for Designers	Enhance their career prospects. Extend their current design knowledge to a different design discipline.
London College of Communication (LCC): MA /Postgraduate Diploma in Design Management *Discontinued	Students will be required to demonstrate that they can work on their own over a long period, manage complexity, research in depth, evaluate leading knowledge, justify a research question and advance the subject of design management by analysis, synthesis and original conclusions.

<p>Central Saint Martin College of Art and Design (CSM) MA Innovation Management</p>	<ol style="list-style-type: none"> 1. Team work, problem solving and opportunity development; 2. Employing critical judgement, select tools, methodologies, key theories and critical discourses 3. Utilising creative risk taking and experimentation 4. Defining, analysing and critically evaluating skills 5. Presenting information 6. Applying systematically tools, methodologies, key theories and critical discourses to formulate research questions; 7. Negotiating the adoption of innovative propositions within business and corporate scenarios; 8. Managing resources 9. Identifying and developing innovative business and corporate opportunities 10. Locating, evaluating and articulating the value of Innovation management.
<p>The University College for the Creative Arts MA Innovation & Brand Management</p>	<p>knowledge, understanding through application of ideas, research and methodological structure, technical and applied skills.</p>
<p>Lancaster University (LICA) MA Design Management</p>	<p>The curriculum offers methods of teaching, learning and assessment which develop subject specific as well as transferable skills, providing opportunities for students to develop independence of thought and critical judgement. The ability to communicate findings and conclusions to specialist and non-specialist audiences will be facilitated.</p>
<p>Northumbria University MA Design Management</p>	<p>Demonstrate student’s capabilities on an ongoing basis. This is representative of their professional and academic character and personal foundation for the objectives defined in the students’ learning contract. The study formulates a proposal for independent study focusing on a learning contract with specific objectives.</p>
<p>Centre for Competitive Creative Design (C4D) MDes Design & Innovation for Sustainability</p>	<p>The course provides essential attributes in reframing and expanding the ways individuals and organisations think about sustainability through a design-led approach. Develop students through research and industry collaboration for future innovation leaders.</p>
<p>Kingston University MA Design for Development</p>	<p>Students will develop socially and ecologically responsible design knowledge and practical skills; develop leadership and organisational skills. Through a mix of design project work and other forms of assessment which include: written assignments, live projects, and major design research project.</p>
<p>University of Wales Institute, Cardiff MBA Product Development Management</p>	<p>Provide students with a sound basis of the product design & development process by contextualising product design within the broader commercial environment. Equip students with the knowledge, skills and expertise necessary to plan, implement and manage a successful rapid product development (RPD) process. Module work will demonstrate the level of understanding along with the ability to apply that knowledge.</p>
<p>Imperial College London, (Design London) MBA Innovation, Entrepreneurship and Design course</p>	<ul style="list-style-type: none"> • The practical skills needed to assess commercial potential of new products or research under development • The strategic thinking required to effectively address the challenges of introducing new products to market • The skills necessary to build a strong client-consultant relationship and deliver value through the project to the client • Communication skills in a multi-disciplinary team under time pressure.

Appendix 1-5:

Summary of the Teaching Methods of Postgraduate Programmes in Design Management, UK

University & Course Title	Teaching Methods
Brunel University A: MA Design and Branding Strategy B: MA Design, Strategy and Innovation	Practice-based modules; Lectures (a briefing on the concepts and theories); Seminars (group discussion); Design related projects (team work with research and presentation); Tutorials.
Staffordshire University MA Design Management	Practice-based modules; Lectures (a briefing on the concepts and theories); Seminars (group discussion); Design related projects (team work with research and presentation); Tutorials.
Birmingham City University MA Design Management	Workshop format, combining group activities with short periods of input from the lecturer. Case analysis; discussion; group activities; outside speakers and tutor support.
De Montfort University A: MA/MSc Design Management B: Master of Design Innovation C: MADesign Entrepreneurship	Modules in the first two semesters are taught through seminars, lectures, team working and design workshops. Students undertake independent research, analysis, research project development and writing up of their dissertations, supported by individual tutorials.
University of Salford A: MSc/PgDip Design Management B: MA International Business and management for Designers	School of Art & Design modules are assessed by projects negotiated with module tutors. Business School modules are usually assessed 50% by project and 50% by examination.
University of the Arts London A: London College of Communication (LCC); MA /Postgraduate Diploma in Design Management *Discontinued B: Central Saint Martin College of Art and Design (CSM); MA Innovation Management	A: 'blended learning' model with lectures, seminars, tutorials and self-initiated research and residential workshop. B: group activities- including, research, presentation and documentation, group plans, organises, manages and delivers an Innovation Conference.
The University College for the Creative Arts A: MA Innovation & Brand Management B: MA Arts Management	Lectures, seminars, industry visits and group tutorials. There is a strong emphasis on independent research.
Lancaster University (LICA) MA Design Management	Graduates will be well positioned to shape the emergent roles of design in an increasingly complex world by managing design projects. As the course progresses, teaching and learning moves from methods and approaches which include more formal staff input and directed learning, towards increased independent and self directed learning.

<p>Northumbria University MA Design Management</p>	<p>Lectures, seminars, industry visits and group tutorials. There is a strong emphasis on independent research and self reflection.</p>
<p>Centre for Competitive Creative Design (C4D) MDes Design & Innovation for Sustainability</p>	<p>The learning and teaching style of the course is participative, reflexive and integrative. In addressing complex, real-world issues, it asks students to make links, to ask new questions and propose solutions and ideas towards sustainable development.</p>
<p>Kingston University MA Design for Development</p>	<p>The course is delivered through design projects, lectures, seminars, workshops, master classes, and field visits and, then, a major project in association with an organisation.</p>
<p>University of Wales Institute, Cardiff MBA Product Development Management</p>	<p>Students will have a personal tutor during their time on the pathway as well as a module leader for each module you undertake. Module work will be assessed by looking to see if students demonstrate their level of understanding along with the ability to apply that knowledge, rather than the ability to simply repeat information that have been given.</p>
<p>Imperial College London, (Design London) Innovation, Entrepreneurship and Design course</p>	<p>Operating as part of a multi-disciplinary team, interacting with key researchers and practitioners, students will evaluate the commercial potential for their own ideas, or an idea being developed by one of growing community of project partners, including Imperial Innovations and Innovation RCA. The IE&D course is delivered by the Entrepreneurship Hub, in collaboration with Design London.</p>

Appendix 1-6:

Summary of the Teaching Aim and Objectives in Postgraduate Design Management Courses in China

University & Course Title	Course Aims & Objectives
Central Academy of Art PG study in Design Management	Provide a higher level of project management experience in the design education and business. In order to improve design quality and comprehensive project value.
Tsinghua University PG study in Design Management and innovation	Equip designers with professional knowledge and skills in line with market-oriented operation. Also enable managers with operating characteristics and operational efficiency of design business, in order to gain considerable economic benefits.
Tongji University Design Management study for Designers Design Management study for Senior Managers	Training of urgently needed high-level designer, design educator, researcher and design management talent. Establish the design leadership in both private and public sector.
Tongji University - Milan Polytechnic University MDM in Design management (Environmental Design and architect design)	Provide a new way of PG study, while embrace the lasted trends and resources of design management.
Shandong University of Art and Design MA Design Management	Provide design and management talents not only understands design concept but management skills. Be able to understand the complex to design strategies and enhance the value of the enterprise operations.
Shanghai Jiaotong University MA in Art and Design Study (Art Management) Design Management in Industry Design International PG cert. study associate with USA university (MA 1+1)	Training high-level design talent, to acquire new product development process and control capabilities, and abilities to forecast design trends.
Renmin University of China PG study in Media Art and Design Management	Equip students with artistic quality, creativity, market knowledge and management ability of the industry trends with strong sensitivity and ability to control the new media industry in China.

Appendix 1-7:

Summary of the Course Content in Postgraduate Design Management Courses in China

University & Course Title	Course Content
Central Academy of Art PG study in Design Management	Design process and methods, design innovation, design leadership, design market, design resources, design brand operation, design audit, design evaluation. Management skills, project management, brand management, knowledge management research methodology.
Tsinghua University PG study in Design Management and Innovation	Design methodology; Design method; Design and cultural issues; Design thinking; Product development project management and design strategy; User-led design and design in society.
Tongji University Design Management study for Designers Design Management study for Senior Managers	Design Innovation and strategy; Design Practice; Creative industry development; Design experience (non-designers) and design implementation(designers); Government support in design firms; Sustainable design; Creative industry Management.
Tongji University - Milan Polytechnic University MDM in Design management (Environmental Design and architect design)	Design management &strategy; Branding design and management; Innovation management and design process; Design-drive creativity and product service system design; Environmental design and Architect design related subject study.
Shandong University of Art and Design MA Design Management	Design process and methods, design innovation, design leadership, design market, design resources, design brand operation, design audit, creative thinking, management skills, project management, brand management, knowledge management research methodology, knowledge management, design innovation.
Shanghai Jiaotong University MA in Art and Design Study (Art Management) Design Management in Industry Design International PG cert. study associate with USA university (MA 1+1)	Product design, design management, inter-active design, graphic design, environmental design, multi-media and technology study.
Renmin University of China PG study in Media Art and Design Management	The course is visual management, planning creative design-led, integrated marketing and brand concept; with a combination of art training, artistic accomplishment, creativity, market knowledge and management capacity-building.

Appendix 1-8:

Summary of the Course Structure in Postgraduate Design Management Courses in China

University & Course title	Course Structure
Central Academy of Art PG study in Design Management	PT and FT approach. 6months teaching and 3 months graduation thesis writing. Course has emphasised on Design strategy; Design organisation and Design professional development.
Tsinghua University PG study in Design Management and Innovation	Combining a suitable expertise team both in design and management filed from universities and industries. Part Time, 240 study hours.
Tongji University Design Management study for Designers Design Management study for Senior Managers	Combining a suitable expertise team both in design and management filed from universities and industries internationally. Four seminars on different themes and finish with an assignment.
Tongji University - Milan Polytechnic University MDM in Design Management (Environmental Design and architect design)	First Phase: design management related course in 4 modules; design of specialised courses in 5 modules. Second Phase: work camps and internships within international work camps and domestic work camp.
Shandong University of Art and Design MA Design Management	Each module finishes with project based assignments plus dissertation.
Shanghai Jiaotong University MA in Art and Design Study (Art Management) Design Management in Industry Design International PG cert. study associate with USA university (MA 1+1)	Design Management as module studies under the MA course frame.
Renmin University of China PG study in Media Art and Design Management	Life project module combined with term lectures.

Appendix 1-9:

Summary of the Learning Outcomes and Teaching Methods in Postgraduate Design Management Courses in China

University & Course Title	Learning Outcomes	Teaching Methods
Central Academy of Art PG study in Design Management	Independent analysis and address the subject of theoretical and practical problem solving skills.	Method teaching and case study
Tsinghua University PG study in Design Management and Innovation	According to the design needs and 'designer' development needs, in line with the overall design of the designer trends and the quality of basic knowledge and skills required.	Cross-project portfolio work, case study and life project discussion.
Tongji University Design Management study for Designers Design Management study for Senior Managers	Provide creative design and management talent for different aspects of culture and creative industries.	Use of open and modular teaching curriculum, seminars, case studies and life study with dynamic reports
Tongji University - Milan Polytechnic University MDM in Design Management (Environmental Design and architect design)	Provide opportunities to senior level managers within the industry with different aspects of culture and design.	Case study and life project discussion
Shandong University of Art and Design MA Design Management	Independent analysis and address the subject of theoretical and practical problem solving skills; Promote theoretical, conceptual research way of thinking. Integrate interdisciplinary knowledge and skills; strengthen students' ability of critical thinking, theory and research capabilities.	Role play, design audit and life project
Shanghai Jiaotong University MA in Art and Design Study (Art Management) Design Management in Industry Design International PG cert. study associate with USA university (MA 1+1)	1, independent learning and innovation ability 2, have good communication skills and team working skills; 3, problems solving skills; 4, good grasp of the international design market dynamics, ability to grasp the latest design concepts and applied real design work; 5, design capacity and skilled use of computer-aided Tools in professional level.	Workshops study
Renmin University of China PG study in Media Art and Design Management	Cultivate artistic quality, creativity, market knowledge and management ability of the industry trends with strong sensitivity and ability to the new media industry professionals in China.	Theoretical study, case study, practice training and academic seminars

Appendix 2-1:

Interview Questionnaire of Leading Academics both in the UK and China

Questionnaire of Leading Academics both in the UK and China
Q1: What is your definition of design management?
Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?
Q3: In your opinion, what is the difference between design management and design leadership?
Q4: In your opinion, what is the outcome of design management role in the public and private sectors?
Q5: In your opinion, how can design be merged with best management practice?
Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?
Q7: What core elements do you consider important within design management postgraduate study courses?
Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?
Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?
Q10: Where they exist, the roles of 'design manager' are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?
Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?
Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

Appendix 2- 2:

Interviews Questionnaire of Design/ Management Individuals in both Public and Private Sectors in China

Questionnaire of Design Managers from both the Public and Private Sectors in China
Q1: On reflection what do you consider the roles of design management in both the public and private sectors?
Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?
Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?
Q4: In your opinion, how do the graduates apply these key skills to the outside world?
Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?
Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Appendix 2- 3:

The Key Documents of the Higher Education and Design Management Related Policies Study between the UK and China

Document Code	Policy Documents Names
UK ^{Hd1}	TLRP 2009, Effective learning and teaching in UK higher education.
UK ^{Hd2}	Submission to the Review of Higher Education Funding and Student Support, Jan. 2010, Russell International Excellence Group.
UK ^{Hd3}	Report of the British Academy, January 2004. That Full Complement of Riches: the Contributions of the Arts, Humanities and Social Sciences to the Nation's Wealth.
UK ^{Hd4}	Report of the Arts and Humanities Research Council, June 2009. Leading the World: the Economic Impact of UK Arts and Humanities Research.
UK ^{Hd5}	Lord Sainsbury of Turville, 2007.
UK ^{Hd6}	Library House Report, 2005. The Impact of the University of Cambridge on the UK Economy and Society.
UK ^{Hd7}	The Leitch Report, 2006.
UK ^{Hd8}	TLRP, September 2008, Education, globalisation and the knowledge economy.
UK ^{Hd9}	Cox review, 2005.
UK ^{Hd10}	Design Council, April 2010, Lessons from Asia.
UK ^{Hd11}	NESTA Report, Feb.2008, Beyond the creative industries.
CN ^{Hd1}	Blue print of Policy of control the higher education development, May 2005, the National Council of P.R.C.
CN ^{Hd2}	Quality Engineering Project, as The HE quality of teaching and the educational reform project, 2005, the National Ministry of Education , P.R.C.
CN ^{Hd3}	State Council Routine Conference Report, January, 2009, the National Council of P.R.C.
CN ^{Hd4}	The National Medium and Long-term Educational Reform and Development Planning Proposal 2010-2020 , April 15, 2010, the National Council of P.R.C.

CN ^{Hd5}	The National Medium- and Long-Term Plan for the Development of Science and Technology (2006-2020) the National Council of P.R.C.
CN ^{Hd6}	United Nations Conference on Trade and Development (UNCTAD) in their World Investment Report, 2005.

Appendix 3-1:

**Interviews Transcripts of
Leading Academics in the UK**

Interviewees of Leading Academics in the UK	Organisational Institutions
UKIa1	MA Design Management Course Leader; Northumbria University, UK
UKIa2	MA Design Management Course Leader of Birmingham City University (BCU), UK
UKIa3	MA Design Management Course Leader; Salford University, UK
UKIa4	Former MBA Design Management Course Leader; University of Westminster, UK
UKIa5	MA Design Management Course Leader ; Warwick University, UK

**UKIa1: MA Design Management Course Leader; Northumbria University,
UK**

Q1: What is your definition of design management?

This is a very tough question to answer as it changes as time goes by; it's very much a moveable feast.

Perhaps a current definition is "How you usefully design a resource for business advantage". Design management is about change.

Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?

This is linked to the first question. The whole thing gets more and more complex, the more I stay with it and the less clarity there is.

However, the next stage is 'Social innovation'. Innovation is a tag which sits well with design management but there is a lot of tension between notions of planning, at project level, management and strategy thinking, etc. – on all levels and tension between different ways of thinking, rationale and creativity.

Challenges: Design management covers such a broad area – as already seen it is difficult to pin down a definition, there are many different factions, depends whether we think design management is central or no. Design in business / engineering is split. There is tension between these two areas and groups of people – they are very polarised and territorial.

Opportunities: Social innovation used for the betterment of society. This differs slightly with the more commercially focused area of design management.

Q3: In your opinion, what is the difference between design management and design leadership?

Design leadership has a strategy which works on a very different level to design management. I don't like it, there is tremendous tension between the 2 and that is very much a problem when you're teaching it (in terms of people's expectations).

Q4: In your opinion, what is the outcome of design management role in the Public and Private sectors?

It's always going to depend on which aspect of design management that you take. Design management in its broadest, leadership and social role is absolutely central to the future; both of the public and private sector (certainly in the UK). There is a shift in government to more participation at local level (NHS). I'm working with the business school, commissioning for local government and we need to ask what, as design managers, can we bring to these broader areas / social roles?

Another thing foremost in my mind, in terms of design management, is that design management should be in collaboration with leadership thinking. Partnerships, collaboration are the future. Design managers are not at the centre of the universe, things aren't always design driven. Design management is trying to do too many things, wear too many hats and we need to understand how design thinking fits in a global sense.

Q5: In your opinion, how can design be merged with best management practice?

We need to enjoy working on a live project with the business school to explore what those interactions / inter-reactions are: who's good at what. It's taken a long time to get this stage. The need to understand all stakeholders is a must.

It's all about added value – both for industry and individual CPD. This, in turn, will change the way we teach and what we teach. This is where we are now it's not just a theoretical business management model.

Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?

I argue with myself on this one – a lot. I value the fact that I did an MBA in the business school and that had nothing to do with design. I value that because of the approach taken at one point in time. In similar fashion, there is a lot of value in being immersed into a design school – for those coming into design management with no prior knowledge and thus being exposed to different ways of teaching and values.

However, I don't like a 'watered down' approach. A cutting edge business research base is needed; if not, we just go down a teaching approach and if it's business teaching, you get a teaching experience rather than research. We need a coming together at research level and very good research practice.

We can no longer give business education in the way we have always given it and the same goes for design management education. In the first instance, it has to happen at research level and then we can look at the systems we use to teach altogether.

The partner in all of this is industry. New models are going to come out of research and enterprise as opposed to going into a new territory. It does not need to be polarised or mixed, as long as it's cutting edge.

Designers shouldn't keep trying to go over into business without any business background. In the past, we have tried to populate this territory (business) with design management, without actually understanding what the territory was.

We should be understanding the best organisational and education theory and that's the platform we're going from – we may even lose the design management tag. The tag is useful in that it contains lots of polarised disciplines, whereas design leadership tends to say it's about leading.

Q7: What core elements do you consider important within design management postgraduate study courses?

I would go with what we've developed here. I didn't start from scratch as I inherited certain things: staff, curricula, etc. and we've built on that.

What we have here is quite strange design management but I'm happy with it, almost by default, because central to it is understanding what you know. This is absolutely right as you can teach project management, any sort of theory, but if you can't reflect and understand yourself, contextualise it, you don't have any models that you can transfer.

Our programme does not have a lot of the traditional things in it and it's done by understanding theory and applying it to projects in different ways and then reflecting on it. I think it's a very strong model. It hasn't really got design management written on it but if you want to get design management out of that it gives you a very good basis because it fits within a business context and social context and you take it in the direction you want to go in. Each individual student has to work out what they need / can take from the course. It's about understanding who you are, what your strengths / weaknesses are and you take that with you; it's transferable.

It is done through project based work (e.g. from Proctor & Gamble) and takes people outside their comfort zone. So it means if you learn to apply what you know to situations, you can apply it to anything and that's the learning (PBL); through reflective practice (albeit, a very sophisticated theoretical model). This is the basis of what we do.

Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?

See Los.

Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?

For me, that's a critical question. We deal very much in tacit knowledge; things which are invisible – a different sell when people are used to having more concrete, tangible things.

Everything we do is about creativity and tacit knowledge and it takes quite a leap of faith when people look at the programme, dealing with all these invisible things and assessing these invisible things – paying lots of money for invisible things BUT they're the most valuable.

- UG: skills to make stuff – (1) making and doing (2) things you can see.
- PG: tacit skills – understanding – these are the things valued by industry, too (according to research) – higher level skills.

It's taught through application and reflection, which make these skills visible (throughout the design process). You can actually show what you've got by producing and interpreting something.

Q10: Where they exist, the roles of 'design manager' are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?

Firstly, this is exactly where we are: we need to co-create with industry (we do at least one real live project with the students).

How do we develop curricula to meet individual student need should they wish to specialise in one area? WE DON'T. We do not focus on individual roles: graphic designer, for example. There is lots of team work and roles are varied. It's not necessarily applicable to anybody.

We work with DNA and well-being projects so it's almost 'domain free'. It's about applying the knowledge the student's getting within teams, so graphics will come in handy; individual skills will come into play within the team. This allows students to 'domain shift' i.e. a graphic designer is not stuck doing graphic design. Hopefully, this holistic experience feeds back into graphic design to help them.

Secondly, another strand is supervision and support where they can link with other industries and develop their skills.

It is useful to develop management skills; for those who want to design manage i.e. manage a team and project.

This might entail looking at how strategy works in the companies they work with, looking at the design management element or marketing or looking at all elements within the same project.

The outcome is for the company. This is a distinction that learning and assessment is separate from what the company is asking for. The team can come up with a solution for a company but this is not assessed at all. We assess what they are making of their learning.

Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?

By getting students to discover what their needs are – where they want to go, etc. (CPD). The theoretical basis gives them the tools to be able to do that. We mentor, we coach, we facilitate. We provide the tools / hone the skills which enable them to analyse where they are, who they are, what their definition of creativity is and what their external environment is. We want them to ‘Evaluate, Reflect and Move on’.

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

The key issue is to rethink it. To ‘piggy-back’ is wrong, we just need to ‘leap-frog’. This is exactly the way to do it, to procreate with industry and with systems that are applicable. Students come here in order to go back home and change things: “Social innovation”. Design management is about change.

There are two forms of innovation (1) Value / money (2) Social. Nowadays the two are interlinked. Big companies are saying they want life to be better and so there’s money in it. Regeneration, well-being etc. all fit in to social innovation. E.g. students from Korea: government policy; it’s about making life better. We’re doing quite a bit of work in this area and it is part of the future of where we’re going with design management.

I can’t think of anything off the top of my head that hasn’t been covered in the questionnaire.

This area of study is absolutely essential to lots of people in many different ways. From my point of view, a pedagogical one, it's good to look at what people are saying and doing. Also, the world is changing. There is more about collaboration nowadays. Students just used to come over from China. Not now, it's more balanced.

We're moving into new areas and the idea of 'leap-frogging' where we are now to a future where we all work together is absolutely central to business, academia and research. We would hope that once students join with industry, they co-create with that industry.

Nobody can cover everything or do anything. You have to work out where you want to be, what sort of a design manager you are and so it's different to different people.

It's important to understand the organisation and how you project manage people in projects. I don't think you necessarily need to integrate it. They're all topics in themselves, which depend on what sort of creature you were or what needs were driven by an organisation and what the organisation wanted from you. This represents a nice triangle.

UKIa2: MA Design Management Course Leader of Birmingham City University, UK

Q1: What is your definition of design management?

A very difficult question to answer as:

1. The term has changed over time
2. The term is one of several you could use for the same thing, depending on the part of the university in which you sit. E.g. you may not call it DM if you're sitting in the business school, but you might in AMD, etc.
3. The term itself is poor and has rendered the discipline powerless. The discipline has survived in spite of, not because of, the term DM.

I see DM as being centrally an aspect of education for emergent managers of design, but this doesn't gel with many industries. If you talk to people about DM they will question the very nature of it.

History...if you look at the history of the term in the early 90s it was fairly popular. In the mid-90s it started to go out of favour because the design council said there really is no such thing as DM; it's just 'management'.

In latter stages it changed again to a rather more intellectual definition within institutions, primarily because of the nature of the UK becoming increasingly post-industrial. The term 'management' is easily applied to a manufacturing process.

Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?

I think in two main areas:

1. Strategic management: at international level because, from a UK perspective, and probably Chinese, too, the notion of design in a global context will require a set of skills and technologies (technologies may be there, but the skills most certainly aren't).

There is a need to think more globally. For example, understanding different markets and issues of strategy and control of other people in different cultures is important. There is also a need to differentiate between portraying and responding to a culture...However, internationalisation is the 'buzz' word.

2. Post-industrial necessity: one increasingly sees DM as being associated with branding. People talk about the design industry and I never know what they mean. It is an inappropriate term as there is no such thing as 'creative industry' as all industries are creative.

From the issue of DM in universities, it usually involves an element of practice - a practical thing which I think is very useful. To be reminded of what designing is, is a good way to actually understand the process of management. The challenges and opportunities are international, strategic and post-industrial.

Q3: In your opinion, what is the difference between design management and design leadership?

Leadership is a more appropriate term nowadays because management is always associated with 'Fordism' and leadership is a more effective term for the 21st century. On the other hand, management represents a disciplined approach to a problem which has got a history. Leadership hasn't got a history in academic terms and this is probably why we've stayed with the term 'management'.

The difference is intellectual, in practical terms: taking others with you as opposed to instructing them is an issue of leadership and is more effective nowadays than the term 'management', which refers to control.

Leadership exemplifies management: it says "how you do it", "I will lead by example", whereas 'management' is a term associated with a closed door.

Because you have asked the question within a particular time frame, this is the answer given. If you'd asked the same question 20 years ago, you'd have got a different answer as the term 'leadership' held no currency. It is an 'age' thing; time and place.

Q4: In your opinion, what is the outcome of design management role in the Public and Private sectors?

I find it a difficult question to answer because the public and private sectors are becoming increasingly similar and if they are similar, then the skills required to organise them would also be similar. Government backed organisations in the UK have to meet professional standards, be responsible when using public money and, on some occasions, run at a surplus or profit.

As such, the increasingly similar outcomes are: appropriate management of design, making sure design is represented fully, appropriately delivered and communicated in the organisation. All these things would apply to all organisations irrespective of sector.

Q5: In your opinion, how can design be merged with best management practice?

By having people with a combination of skills. It is a bit like herding cats with designers and there is a dichotomy as DM is a non-term and we see that you cannot manage creativity. You can facilitate, effect, rather than manage creativity. Managing creativity per se, is not an appropriate association. The only way you can facilitate design is to develop a hybrid type of person; someone who's got more than one skill-set.

Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?

A bit of both. The 3rd choice is 'integrated'. There are certain aspects of intangible values which the business schools have thought about – this hasn't been thought about in design. A lot of people who use the term DM are not aware of that background. People talk about DM as a professional activity but they're doing it in terms of how they teach it. There are aspects which are professional and these cannot be taught, but rather experienced. The curriculum rests outside the institution and therefore it should ideally be partly work-based or contribute to history and tradition of teaching in a university setting (e.g. guest lecturers).

Teaching from books is inappropriate – teaching from practice is more appropriate but the best thing to do is to cherry pick from both areas.

Most MA courses in DM have been developed in association with some sort of business school. UG provision, such as it is, has not.

Q7: What core elements do you consider important within design management postgraduate study courses?

I wrote the course here, which started in 1992: standard CATS rated fare – 120 credits taught modules deals with strategy, managing design, industrial sectors, innovation, law and research methods and skills to do with teamwork and technology. There are 60 credits dissertation.

Very important: The main difference between this course and others is that it has a placement. Another aspect which is very different is that you can do it by work-place / based learning contract. Ideal for practitioners in the industry who can credit into the learning contract elements of work; which is very powerful.

We regularly have people doing the course (not large numbers) who are designers in industry. The designed learning contract is on the web, so it is interactive and the student can negotiate milestones at work, which you reflect on: the equivalence of taught modules. People usually take some of the taught modules in tandem with milestones at work. There is equivalence between the dissertation and projects at work.

This comes from recognition that we don't really know all aspects of the curriculum outside the university. A learning contract is negotiated and teacher becomes a 'guide on the side' rather than a 'sage on the stage'. I.e. a facilitator rather than fount of all knowledge. The guides job is to encourage students to reflect on their place in the work-place.

It is difficult to talk about common elements of core modules in different universities. What we find is the emphasis / intention, is exactly the same but the way it's approached is different. That is right and proper. Many years ago, there was a process for the design of courses in the HE which suggested you had to have certain elements in all courses, which were similar under any one subject heading and that was dispensed with.

Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?

The term design knowledge is very difficult to define as it's always conceptual.

We expect people who manage design to have good soft skills, such as team work, communication skills, leadership and management and professional standards.

What this comes down to is being able to communicate with all different types of people, being in and maintaining control, being confident and assured and able to manage and lead a diverse group of people. We also need graduates who can understand short and long term business goals.

Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?

Most DM students at MA level realise that there's something called management output and artistic output. I would locate creativity in terms of being imaginative in an artistic way.

Tacit knowledge: on the one level, is having sympathy for practice and on another level it is having a knowledge of practice (experience of materials, for example).

However, where that reduces is where courses have ambitions to develop a service design facility which hasn't got a notion of an artistic tacit arena; it's got a systems arena in which core theories and underpinning are actually systems theories – not artistic and there isn't what we might call a tacit thing.

So the future of DM might include that area, in which case tacit knowledge is less important than creativity as DM (managing design) is still a relatively new subject, one which does not represent timeless standards but the future.

Q10: Where they exist, the roles of ‘design manager’ are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?

I think from an institutional point of view, it is good quality case-studies (these could be represented by placements and study visits) and an offer of a generic set of management skills (skills which fully exist across all management courses).

We need to develop a knowledge of design as it is managed in practice, not in theory, and a set of skills which are common to all managers.

Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?

In my experience, the majority of students who do MAs here are converting from one situation to another.

You can classify MAs as being: (1) more of the same, (2) something completely different or (3) research masters.

The majority of people who come into DM have a practitioner background and want to learn management or a management background and want to learn design. Therefore, DM is something of a conversion course. We look at student need with a view to where they have come from and where they are going. All students need an identifiable set of skills they tailor in association with the university (through a process of negotiation). We can only enable learning, not provide a box full of answers. What students get is an opportunity to study, not an award (process, rather than project). The award comes at the end.

All students need different things, so we build in a combination of things into the programmes. One module is built around design policy and the expectation is quite formal. Students have to interview participants in the design industry and the whole process of arranging a meeting to writing the report at the end requires a number of skills (report writing and team working, for example). The module develops a single set of skills via different routes.

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

One of the essential barriers of exporting curricula is culture. What is appropriate in China will not be appropriate here. We teach a slightly different curriculum to Chinese students, to French or others.

The examples of management are different, case studies are different, placement situation is different and the way in which things are portrayed is different. The idea of just exporting a piece of teaching and assuming it'll work is erroneous, it doesn't work. Content needs to be adapted to a different culture and standards maintained which are born out of a hybrid of subjects.

What is similar is the issue of standards. You can export the issue of 'discipline' which is appropriate for that standard i.e. MA in the UK. The issue of disciplined process of learning and teaching appropriate to the award which leads to a universal PhD, MA and undergraduate degree, etc.

How to assess cultural differences and universal standards of management is difficult and requires bodies (British Standard Institutes) and rigorous methodology and research practice.

However, we also need to recognise that we need to use concepts which are understood in other cultures and we should not be too Euro-centric; provide case-studies which have meaning in other cultures. We don't want a shopping basket experience.

DM is relatively new with a smallish research base (literature) but it is stimulated by people moving around the world as all cultures bring something to the DM table.

UKIa3: MA Design Management Course Leader; Salford University, UK

Q1: What is your definition of design management?

It is very difficult to answer. Last year, during a student conference, there was a difference of opinion between students, industrialists and academics as to what DM actually is.

For many people, DM is the management of design but I think a truer definition would probably be much broader and the focus for us is on the business and management side.

Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?

Future: Industry will be the focus and how we define DM will be depend on what is required by industry. In the future, I would like to see the subject geared more towards and built around the needs of industry, especially from a graduate's point of view. Therefore, we will need to establish what kinds of jobs are available before we define the curriculum.

Challenges: I think the big challenge is that within industry there is no job called DM and so, when students graduate, they face a problem of how to convince employers to give them a job. The definition of DM only exists academically rather than in a business setting. There is no specific job title related to the term.

The challenge therefore is how we define the subject. Perhaps, we need to identify one area which comes under one title rather than a broader area.

We need to focus DM on more specific types of jobs and tailor DM courses to meet the needs of that particular job, support that job and provide the skills necessary to do that job...Closer links with industry are needed. We need to let industry define what DM means to them rather than just an academic term of reference...Employability is at the core / heart of the issue.

Q3: In your opinion, what is the difference between design management and design leadership?

I would not link these two concepts together. DL can take many forms, so I don't think there is a clear definition.

DL is part of DM - DM covers a wide range of activities and roles, including a leadership role and managing the design process, too.

I think therefore that DM is much broader than DL.

Q4: In your opinion, what is the outcome of design management role in the Public and Private sectors?

The functions of DM remain the same whether situated in the public or private sectors but the aims will be quite different. The private sector places more emphasis on profitability or managing the client relationship but in the public sector, I assume (because it's non-profit making), that the activities will be the same but the objectives will be different. I can't imagine there's too big a difference between the two.

We try to use a lot of live projects for students and most of them are run in the service sector (e.g. regeneration projects) and non-profit making organisations.

The principle of DM is creativity and innovation – team-working is also important, as is being analytical. However, there is no one particular skill / pre-requisite for the private or public sector. The most important skills are important in both: transferable skills.

Q5: In your opinion, how can design be merged with best management practice?

This is the million dollar question. I think this is an ongoing debate. Designers complain that the business people do not understand design and vice-versa. The first step in reconciling this difference is to communicate the value of design to the business sector; to champion design and educate business on what DM entails and vice-versa. All designers need to have knowledge of business or marketing.

At the moment, they are two separate disciplines and represent two different schools of thought. There may be a shared vocabulary but the words often employ different meanings.

Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?

This is a very good question. I think 99% of DM courses are located in Art and Design schools. I only know of one school at the moment (in America) which has DM in its business school. It depends on where you draw your students from, I suppose. If DM rests with the business school it is more likely to have a business bent and be more business-orientated.

A more integrated approach is needed. We have students from business on our course on a yearly basis but these are few in number as we find, in practice, it does not work too well. This is because they have a totally different background and the content and delivery is different. This difficulty is exacerbated on a year's Master's degree as there is no margin for error.

Q7: What core elements do you consider important within design management postgraduate study courses?

The first would be to apply business and management to DM as students would need to have a theoretical background.

In terms of modules, research, organisational behaviour, business environment and strategic management are important. The majority of our students find a job in marketing on graduation and therefore DM should be tailored to their needs.

People studying DM at PG level often have a degree in design and therefore... do not need to focus on generic design skills. However, emphasis may be placed on design thinking; how to harness their abilities to become more creative – how to think and apply their skills. Enhanced thinking skills could become a core module, built around design, not a module exploring design techniques.

Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?

I inherited the course and so am still trying to make changes and define what its core values actually stand for.

Learning outcomes would include:

- Being able to apply business principles in analysing the design industry.
- Being able to use design thinking and skills to approach business problems.

There are two types of learning outcomes:

- Subject based knowledge
- Skills based

One of the main points is using consumer research and marketing principles to inform the design process.

The course inherited is very flexible and the programmes can be tailored to meet the needs of the students. However, this causes a problem for both management and curriculum design. Students may also not be able to link all the modules together and when they reach the dissertation stage, they may not be focused enough.

Therefore, learning outcomes depend on where you want the programme to go. If most students get jobs in marketing, it will be tailored to meet their needs.

Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?

Because DM is quite a new area of study, I like to keep the course exploratory and allow the students to define DM and what it means to them in their own context.

Teaching and learning strategies encourage exploration and PBL, the use of guest lecturers which allows the student to choose a topic they are interested in. This also allows for negotiated assessment and gives the student greater autonomy.

Q10: Where they exist, the roles of ‘design manager’ are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?

We need to tailor the programme to meet the needs of different types of industry. It is better to bring industry into the curriculum, provide students with more live projects and invite industry to come into the university. Q & A panels could provide greater links with industry and develop work placements and sandwich courses. Time is already allocated for students to spend time in company and the contacts there just need to be developed.

Q11: In terms of curriculum development, how do you know the students’ needs? How do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?

It is quite difficult to reflect employers’ needs in course design. However, this can be overcome through more links. Also, the links they have and the people they work with may have very different needs and not represent the industry as a whole – needs may be particular to each individual company.

Therefore, modules and assessments need to be quite fluid (which they are starting to be), not restricted by definition, but based on an individual live project.

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

I wouldn’t necessarily think DM education is successful in the UK. Maybe I’m cynical but the origin of DM as a subject responds to designers rather than business need. DM education is still driven by the needs of designers; hence the fact we don’t see many DM programmes in business schools. ‘Design’ is writ large in the programme title DM. Yet, we cannot isolate DM from design practice. Therefore, we need to focus on what issues arise here before we try to transfer anything to another country.

I don’t think cultural differences (societal) represent a big problem as its industry, rather than culturally driven. The economic environment is more important than culture.

DM is new in the UK but in China it is very new. Therefore it can be defined quite clearly – China has a blank canvas with which to work from. Therefore, we do not need to transfer.

There are different levels of cultural differences: course content and organisation of the course.....It is a very complicated issue, not just for DM but for all programmes.....It might actually be easier to do it in China because there are fewer restrictions on employing students to do projects – people use students for all sorts of things. The skills used to meet the learning outcomes and complete a live project may be different but the aims will be the same – how they achieve it is irrelevant. For example, Chinese relationships are less direct than in the UK.

In the UK, what the student wants and what the clients want from a live project are open to interpretation; there is more freedom. However, in China, the system is far too rigid, there is no flexibility as most people follow what the government says. Because it is not well planned (i.e. too informal) and, as such, it is difficult to assess. Students need a clear direction in which to travel.

The dilemma is that we want an MA to meet the needs of industry but we don't want to lose the quality. We don't want an MA to become a training course. Yes, we want students to get a job but we also have to think about the qualification itself.

In China, the two realms Academia and industry will remain separate. UK models incorporate these two systems better. There is also no flexibility in China; all subjects are subjected to the same rigid guidelines, regardless of institution.

UKIa4: Former MBA Design Management Course Leader; University of Westminster, UK; and

UKIa5: MA Design Management Course Leader; Warwick University, UK

Q1: What is your definition of design management?

UKIa5: Very interesting question. Set up my DM course 3 years ago and remember articles being written about whether the term 'DM' is of any more use. I was just getting to grips with it, too. Institutionally it's important to have a name; in order to establish academic / disciplinary integrity (difficult with a hybrid).

However, there is an issue. What an institution wants is not always what's wanted elsewhere. DM has constructed itself by responding to what's going on around them / outside universities.

I would rebrand the definition to "Managing Creativity". I've based my study on DM to an understanding of cultural communication and managing creativity. DM has to react to external factors; however universities are slow to do so.

UKIa4: DM moving out of management science into more communication based management. DM is the management of design but the problem is then, what do you define as design?

It's more about the verb 'to design', rather than the noun. Design straddles a huge number of areas from art to innovation to engineering and this doesn't help the field because the field needs to be narrow. However, it is the creation of something new, which covers lots of roles.

Problems of definition-- If you look up 'industrial design' on the net, it covers everything and nothing. People from different backgrounds have different definitions. It's not a very straightforward question; therefore the answers are not very straightforward.

Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?

UKIa4: For me, the biggest problem of DM is developing an academic underpinning of it, which depends partly on the definition of it (terminology) and then getting research carried out into its functions (certainly true of the UK): maybe even further behind in other parts of the world.

The future: DM has a great future because it's central to lots of organisations in terms of user experiences, etc. Intangibles – creating things other firms cannot copy.

If DM is to develop, it still has a long way to go.

UKIa5: I would say that it's difficult. I don't have the experience to see the future; I'm still struggling with the present. But, from where I'm standing, I see a triangle:

1. A lot of powerful idea / creative generating activity; you see it as art.
2. Then lots of creative models of management theory in the business school sector.
3. Then people who are working in design (whatever that is), developing problem solving projects, in order to create objects of some kind.

I hope the future leads to the integration of all these things.

Q3: In your opinion, what is the difference between design management and design leadership?

UKIa4: There is a huge debate going on about the differences between management and leadership. My simplistic little way of thinking about it is that leadership is much more 'long term', is 'broader' and 'more visionary'. Therefore, it is very rare.

I think management is about getting it done (lower level tasks) but there are lots of people who say that's a completely artificial distinction. It's a question of semantics, you can name on the fingers of one hand design leaders and they're in companies like 'Philips' (who've just change their design focus, hugely) 'Samsung' and 'Starbucks'. There is clearly a holistic vision of what the organization is and will be. It requires world dominating, long term thinking.

On a management level, you get lots of companies who implement design but are not necessarily visionary. Some computer companies (not Apple) produce bog-standard machines – there's DM because someone's commissioned it, designed and built it but there is nothing visionary about it.

UKIa5: I've always thought management / leadership is not the same: they're not different jobs but different roles. Any person can have two sets of roles. A manager is responsible for completion of a project but a leader takes a strategic role, saying where, not only this project, but all projects / activities are heading.

Leadership is a way of understanding the bigger picture. Leader is 'Where you go'. Manager is 'What you do'.

Q4: In your opinion, what is the outcome of design management role in the Public and Private sectors?

UKIa5: I think the world of DM is very different in creative industries and consultancies. There are 3 broad dimensions to the industry:

1. Consultancy.
2. Manufacturing.
3. Retail and service industry.

UKIa4: There is another dimension:

4. The public and not for profit sector.

Different industries will have very different needs and the terminology used means it can be interpreted in a number of different ways. Therefore, we could say: "What is the outcome of the DM role?" Interpretation of role is also important, as are processes and communication across sectors.

UKIa5: Whatever sphere DM is moving in (1-4), there is something like a basic design process; a series of stages of understanding i.e. generating an idea, constructing a concept, building a prototype, testing etc. that, in my experience, still stands. Wherever you're working, DM is managing the creation of ideas and this is valid in any context.

Q5: In your opinion, how can design be merged with best management practice?

UKIa5: Design relationship with any kind of so-called best practice is quite often a critical one because good design always has an element of the innovative, counter-intuitive about it. Its relationship with standardized best practice will always be a difficult one, but merging will be a credible one. It will force 'best practice' to re-think itself.

Design does move towards best practice, it can't re-construct management – there's a dialogue that has to take place; a "Critical Dialogue". Design and management best practice have to reassess themselves – best practices are just formulations, generalisations about things that have worked in the past and design is not about past concepts, it's about the future.

UKIa4: This is an impossible question to answer. I don't have a clue where to start. However, people in industry may have a very different view, as it is the sort of thing they're grappling with, whereas an educationalist is not.

Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?

UKIa4: For me, this reflects exactly where I come from. It has to be in the business schools because management may not understand design but they do understand organisations and concepts. I think one of the problems about designers is that it's sometimes quite hard for them to get out of their artistic box. They find it difficult being confronted with the language that accountants talk. Because organisations are economic actors, artists and designers are not very comfortable with it – this may reflect my background.

UKIa5: This is a context specific question and has a lot to do with the way all education systems function. By giving business schools more control of the design function, DM will never really flourish. The set-up we have in Britain, design schools don't have much of a chance, although DM should ideally rest there.

However, the expansion of the UK art schools back in the 1950s / 60s was influenced by Germany, all from Bauhaus. The schools tried to move away from craft-based artisan approach to a more integrated business approach. But, it's never quite happened in the UK – stuck between the business school and design school.

UKIa4: DM is very rare in business, that's true, but how many art schools teach theories of management. There are environmental and institutional issues (external) which don't allow universities to do what they want; accreditation, for example.

We wanted an MBA in DM but we weren't allowed. That's why DM is an MA.

Q7: What core elements do you consider important within design management postgraduate study courses?

UKIa5: I don't know what other DM programmes offer but on my award it's quite specific, not expansive. It starts with:

1. Visual analysis and interpretation. It looks at brain patterns in adverts to cultural interpretation; colour theory, interpreting images. The course is very exploratory, in as much as students sit around playing with all sorts of materials and textures and colours. It's very interesting as it is international; "What does 'yellow' mean to me as a Chinese person". Is it different from a German / Brit? Exchanging cross-cultural roles is a fundamental aspect.
2. The other thing we teach is Communication and Innovation Strategy and other ways of using the visual within a business / management context.
3. Design business. Discusses how agencies and consultants run themselves (branding, etc.).

The modules are broader:

4. Cross-cultural communication: Particularly in relation to images (ethics / globalisation). Communication in intercultural business contexts and issues in cross-cultural communication
5. Designing social space.
6. Design and contemporary art. How can it be a resource? Can we see it as exploratory? Mass media?

It all started with toothpaste design in the US. Artistic creativity is likely to be in media now, not just art itself. Now, when you see a car, you don't see engineering you see culture, lifestyle, etc.

It all seems very messy, lacking rigour, but it works. It depends on your background, I suppose. I come from Humanities so less weight is given to business and management modules.

UKIa4: MBA with 4 management courses; all geared to design function; quite conventional.

Perhaps DM should sit between business and design schools. It's a real problem and I have no answer to it.

Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?

UKIa4: This is another tricky question. Cultural theory: students have to create and respond / translate products to people in different cultures.

UKIa5: Business and arts create a dynamic and need strong reference points / realms of knowledge. The challenge is to translate this knowledge.

Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?

UKIa5: These are horribly challenging questions.

I run small practice-based modules of 3 – 4 weeks outside modules / programmes. Students need to internalise knowledge and learn by doing; cyclical application (Kolb). For example:

1. Ideas generation. To create something and show how it fits together. To generate design solutions.
2. Business simulations. Students set up a virtual company and bid / pitch.
3. Business presentations. Students have to come up with an advertising campaign, etc.

Students need to come up with innovative solutions to problems; going from raw ideas to innovation to solutions to outcomes.

Interaction is important as lots of academic work is solitary. However, systematic learning does not work in modules; it works much better when moved out of the classroom. This is quite an important thing for me. We need to explore stuff, develop skills and tacit knowledge.

UKIa4: The most important thing is to make learning fun.

I have a problem with design always being creative; it isn't, e.g. jewellery.

We give students a book of architecture about London and they walk around and give their own impression of the city. They work from a bounded framework but they can do what they want. This is a great learning experience as all the key elements are there; tacit knowledge, for example.

Q10: Where they exist, the roles of 'design manager' are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?

UKIa5: We need a DM course which addresses equally all those spheres of business. However, mine is weighted in favour of the creative industries. Most of my students go off to work in advertising, PR, consultancy, marketing and communications. However, my sphere is expanding. For example, Coventry city centre renewal / redevelopment is going to need graphic designers to visualise public / social space. It's all being integrated now; no longer technology based; we no longer have to use software tools in order to play a design role.

However, the MA programme still needs to have an emphasis on one of the spheres as it's difficult to combine everything; from manufacturing to retail, for example.

Practicalities: I only have time and room to give students a general grounding / experience in marketing, communication, etc. If I had lots of option modules and lots of teachers, I could do it.

UKIa4: I don't totally agree. I quite like the idea of getting people who are slightly different from one another (i.e. not specialist in one thing). Separating people off into little boxes means they don't understand what other people are doing. One of the DMI's biggest concerns is how to bring together the warring factions. We try to develop sufficiently vague grounding in generic topics, then allow people to go do some research into specific things. However, there are pros and cons.

Vital: You need to ask employers what their needs are. The successful courses that we run have very strong links with industry. We've had people in from BA, Tesco, Royal College of Art and industrial specialists from the US come in to talk (guest lectures). This helps shape what research people do in their dissertations. It's as simple as that.

UKIa5: The focus was 4 broad-based modules and then ones of a more specific nature: Core modules are foundation; quite separate from the option modules: the basics of management vocabulary, for example. These are the modules that need to be built on. Option modules are focus and specialisation.

Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?

We should be asking students this question.

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

UKIa4: I would point out that things are not homogenous. China is not the same as South Korea, which is not the same as Japan. China is not homogenous, either. HK is very different from Beijing or Mongolia. Different areas are very different and probably at different stages of development. I have problems with culture, management style and creativity; everything.

UKIa5: The UK has a longstanding tradition of the eccentric inventor, small business and entrepreneurship. In China, I imagine, you don't quite have the same; it's more collective, bigger. You should really look at whether the corporate / manufacturing sector in China is at the stage where you can integrate some of your graduates into it.

If there's no place for them then you're just generating unemployable graduates. What kind of DM graduate is going to have a future? Where are you going to get your students from? This will determine the curriculum. The selection process is important. Broadly speaking, in the UK, we're providing conversion courses for management students who don't know design and vice versa. If students are coming from an arts and business background, you need a broader, more mixed curriculum. Very often, we don't get students who've done a BA in DM so we have to start from the beginning.

Appendix 3-2:

**Interviews Transcripts of
Leading Academics in China**

Interviewees of Leading Academics in China	Organisational Institutions
CNIa1	MA Design Management Course leader; Shandong University of Art and Design, China
CNIa2	MA Design Management Course leader; Shanghai Jiaotong University, China
CNIa3	MA Design Management Guest Lecturer; MBA, Shandong University of Economic, China

Questionnaire of Leading Academics both in the UK and China 中国设计管理学术专家问卷
Q1: What is your definition of design management? 问题 1: 您对设计管理定义的界定?
Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities? 问题 2: 您认为设计管理的未来和挑战是什么?
Q3: In your opinion, what is the difference between design management and design leadership? 问题 3: 您认为设计管理和设计领导力的区别是什么?
Q4: In your opinion, what is the outcome of design management role in the public and private sectors? 问题 4: 您认为设计管理在企事业单位当中的角色是什么?
Q5: In your opinion, how can design be merged with best management practice? 问题 5: 您认为设计和管理如何在实践中有机融合?
Q6: In your opinion, should emphasis for the study of design management rest with Design schools or business schools, or should a more integrated approach be adopted? 问题 6: 您认为, 设计管理最理想的学习是在商学院开展还是在设计学院开展, 或者两者结合?
Q7: What core elements do you consider important within design management postgraduate study courses? 问题 7: 您认为设计管理研究生学习的重点是什么?
Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability? 问题 8: 发展学生的设计管理能力的过程中, 有效的知识的构架以及其间的关系是怎样的?
Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses? 问题 9: 在设计管理的课程中, 您如何看待创新和隐性知识在课题当中的角色?
Q10: Where they exist, the roles of 'design manager' are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry? 问题 10: 现实中, 根据产业和组织的性质, 设计管理者的角色很多元化, 您认为课程安排应如何满足产业需求?
Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits? 问题 11: 在课程的安排设定中, 如何满足毕业生的近期需求和长期收益?
Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east? 问题 12: 您认为设计管理系统从西方借鉴转型到东方的重点是什么?

CNIa1: MA Design Management Course leader; Shandong University of Art and Design, China

Q1: What is your definition of design management?

I think we can define DM from asking some questions:

Firstly, how does community look at design in today's competitive environment? Design cannot be treated as a simple skill, particularly reflected in business and academic circles. From a commercial point of view, design is a way of trading; from the perspective of education, design is about how to meet the requirements of education.

Second question, is how do we regard design? I think the first thing is we should look at design not only as a simple creative process, nor make a concrete product from the aesthetic point of view through some methods, but a system. Design should strategically guide a company; it is a business or a social extension method; which proceeds from a strategic point of view.

The definition of design management in my point of view should be: Firstly, it is system engineering, as system engineering it involves process and flow issues, it is not quiescent, it needs to be seen as a whole. Secondly is how to meet the needs of the public from a strategic vantage point and the perspective of business education.

Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?

First of all, the most important thing is what kind of perspective we have to look at this issue. Today, we talk about how to think of design first. Design is a system, we cannot look at it partially and quiescently, design is dynamic not static, as a piece of art work in a museum, or art galleries for people to enjoy, we cannot treat it quiescently. Second, design is a commercial activity to meet consumer demand. From this perspective, design management today is not only product design including costume, daily necessities or a cartoon image of a design, design cannot be look like this, design should be established as a way of service.

As far as the situation in China is concerned, the nation is moving towards the development of a service economy, accompanied by the development of the information industry. The

government has published many policies for service industry development, and has taken many directions. So, we should extend the scope of design to present the unique charm in the service industry development. For example, we do not pay attention to catering industry of the service industry, such as our many design companies, if we look from their business content, most of them are treated as specific objects. The catering industry belongs to the tertiary industry, also service industry, what is the entire business process of the restaurant? It is the decoration, atmosphere, and includes specific things, such as the colour of the table and tablecloth, the spatial layout, lighting design and so on. These are the specific objects we can know, but there are a few service modes, how to get more people to visit the restaurant by designing the service modes in such a way that they are fit for profit purpose. It can communicate with customers through design, retaining customers, through design and planning the service mode.

Thus, from the past tangible concrete 'design', combined with our national economic operation modes and patterns, the scope of design is expanding. Design on this point, for operators and consumers, has never played its role so well, and people are identifying with it. More people can save their time and enjoy better service. This process is planned out by design. Therefore, design management is highly competitive, it involves the investor, the operator, the designer and the consumer, the basic value of design management is very large. At first, we should have a clear understanding of design, through the effective management of design and make effective time savings for more people, get the most value of design and let more people enjoy better service. This is also a way to meet the physical and spiritual needs of the people.

The developing direction and opportunities of design management need itself to maintain this process and the most important impact comes from education. However, we should not market design management concepts; we let people realise it through fierce social competition, which is better for interpersonal communication and introjections. By using your products and services, tangible or intangible, to pass through the mediator, it allows more people to make sense of belonging, find an object such as a team, or something they had involved before. What I talked about is not the challenge of design itself, but getting more people involved in the design process. Firstly, we need education. Education can help people become aware of what kind of society you are in; how to use products and services expediently; and how to integrate through these intermediaries.

Government stresses harmony now, harmony means no violence, no crime and reducing security risks. This also sends information back from different design sectors. Let's talk about design in preventing crime. For example, the bus stops we are using now, from the aspect of material selection, shape-design, the mode of getting on or off the bus, how to prevent the

crime? Many criminals who are drunk, attack objects, such as bus stops; if you build them out of glass, it will bring disaster to the others and threaten security. Such hidden social troubles should attract the attention of designers in order to prevent these problems. The mission of design is to service the community.

To sum up, the biggest challenge we are experiencing now is whether everyone can have a general understanding of design management. I think we are a long way from talking about design management, at the minute in China; we need to talk about design first. We need to encourage more people to become concerned about design. Traditionally, design has been positioned from an aesthetic point of view. That is to say, design and design management are still not being focused on. Education should assume more social responsibility. It is perhaps too early to talk about design management at present in China but there still needs to be a process. It can be realised once people are more able to acknowledge design. Countries such as the United Kingdom, the United States, Japan and Scandinavia, enjoy deep seated understanding of design. In Japan, Germany, children start to learn design from an early age, from that time they know how to combine design with real life, and they have the education that we do not have. This is also because we do not pay enough attention on innovation. Once our nation notices this problem, it will start with education and solve the problem slowly. Education is a long-term project; it is not possible to put all the work on the universities, either, so we need the ministry of education, competent government departments to become aware and address these problems fundamentally, it is a long journey. It is not the right time to talk about design management; but improve the understanding of design in China, as well as different views of design.

Challenges of DM are: 1) how to meet the needs of people, and 2) how to supply better services. So, say DM is a flexible form, there is no frame; it functions differently in different organisations/ products/services. DM is a flexible activity; it combines the values of design; management activities; and designers' personal development. DM in business and the contribution for education should be blended naturally. But, China is very far from this level, at present, the issues relating to the awareness of education and understanding of design, DM development in China needs time. At present, design is always to be seen as a separate career from other communities and industries, which are also heavily influenced by education. The situation we are experiencing now is caused by the poor awareness of the leaders and decision makers in the education sector.

Q3: In your opinion, what is the difference between design management and design leadership?

For an organisation, I believe that leadership is vital, like what I just said about a department which is in charge of design, it holds the policy making power, and the tools for handling affairs by exploiting the policy, whatever design or design management, the role of design leadership in organisations and society is very broad. I think design management is a kind of method, a tool and a platform to service to public and business better and more effectively.

If we speak from a higher level, a nation or community should be aware of the importance of design, and through leadership, using policy making and building many platforms for the industries, therefore allowing more people to understand the meaning of design management, such as what design is about, and which way can lead to better service. If this happens in China, then design management can be performed very well. To conclude, I believe leadership stands at a very important position. However, the process of promotion and implementation of design leadership is essential.

Design management is a specific platform and design leadership is how to lead the organisation based on this platform. In that way, leading capacity plays a very importance role. For an organisation, a state, a society and a community, it is very important. I think it is a subordinate relationship. There is no contradiction between them, like HEIs and the ministry of education, Design leadership is essential for DM education.

Q4: In your opinion, what is the outcome of design management role in the public and private sectors?

Currently in China, from a profit-making perspective, design management is increasingly showing its unique charm and its value. In non-profit organisations, particularly in functional government departments, they have not recognised the importance of design management yet, or there is still a limited understanding that only the designer requires design and design management knowledge, therefore DM has not been employed at a national level. Never mind implementing DM within functional government departments.

However, some profitable organisations and enterprises have realised the importance of DM, especially in Hong Kong, and Southern China, particularly in the Pearl River Delta area, and Yangtze River downstream area, with Shanghai as core, including Guangzhou, Shenzhen, Wuhan, Suzhou, Nanjing, Hangzhou etc, design has become a strategic resources generally,

and plays a very important role in building a harmonious society within China's national policy. A large number of foreign companies have already noticed this issue; many design companies have entered China, and soon will extend from southern China to the whole mainland.

We often see the potential of design to the contribution of economy. However, the development model of China's economy is changing from an extensive economy to create an eco friendly and energy-conservation society. Design has played a role in this process. When design grows quickly, along with the development of design, professional management personnel are required in the industry, by using design better to service the public and community; design management will inevitably be developed.

Design enjoys better recognition in economical operations and Chinese society. Take process as an example, we no longer consider design as a partial problem, or some people are simply engaged in it as a profession, it is evolving into a process, and it is to regulate, control and combine this process. 'Human-based management', 'process re-engineering', 'process design', 'design and business', these words can expand the trends of DM development.

Q5: In your opinion, how can design be merged with best management practice?

Put design into a strategic perspective, its biggest competitive strength is for enterprises to establish identity and differentiation from others. Many organisations do not have independent design research and development teams/departments, often the form they adopt is outsourcing. This requires enterprises to make some effectual strategies according to their current development plan.

At the different stages of development of an enterprise, it is necessary to follow two rules, one is to create the difference, and the other is to maintain successful development-- with good vision. Through this process, we divide the products/services into three aspects: period of expansion, the peak period and decline phase. In this process, how do the different design strategies help the company to create differentiation, and maintain a steady development (even if the product/service is in a decline phase) is the foundation of sustained development. Therefore, design plays different roles in the organisations; one of the most important roles is to draw up the strategies and management of the organisation.

Hopefully, we will slowly start to notice this and make significant consensus. From a typical designers' view, globalisation brings diversity, culture diversity, management diversity, partnership diversity; culture diversity is reflected in people, different people have different

knowledge backgrounds, there are different kinds of knowledge, the experiences of everyone is knowledge, knowledge has differences, some people experience different things from long term working in the industry, the experience is knowledge. Of course, we can get knowledge through education. When the knowledge has diversity, how to manage the knowledge becomes very important, how to manage people with the knowledge, is certainly the key issue to look at.

Thus, the designers in today's climate are not only doing design, without the knowledge of different subjects, design cannot carry on. So designers today not only need excellent design skills, but they also need to assume important responsibilities, which is how to create a high performance team internally, with people with different knowledge and cultural backgrounds, different values, different expertise and experiences. Externally, designers should obtain more valuable information and resources through communicating with others/customers.

Design is not just emotional stuff; it is more a creative play on a rational basis. Designers should play such roles as managers, with such skill. From this perspective, education should assume more responsibility.

Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?

As far as the issue of postgraduate education is concerned, design management has gradually been recognised, I think the DM graduates from design and business schools should have different learning outcomes, such as some focus on management, and some emphasis on the design itself.

Regarding design management, I think its core is design. Management should be the connection with reality through many professions, but without the participation of designers, it is not complete. DM is the subject which deals with how to manage better service in the design industry. Thus, management experiences are helpful to design. However, the key is how to combine 'design' and 'management' well, not only simply putting design management in an MBA course, nor set in a Design study.

The context of design management can give industries better service. We can carry out design management courses in both design and management disciplines. But the growing process is not perfect, perfect combinations are very difficult. It is because the related issues, such as experiences, teachers, structures and directions of management schools, are quite different from the ones in design school. It is so hard to combine and integrate disciplines, this also

reflects the diversity of school cultures.

In China, because teachers of design schools mostly pay more attention to design itself, the teaching content that teachers focus on are limited, this is negative for DM students. We must break the boundaries between schools. For example, in our school this year, we have invited some professional teachers from the business school to teach. However the universities only allow the students to choose in their own school, thus restricting their direction of research and abilities.

Thus, the big challenges we are facing now are, firstly that we cannot break down the boundaries between design and business schools; secondly that the reality of DM education needs practice in a real-life situation, although we try to guide students to re-examine design from different disciplines; to provide new businesses to the company; and to develop the business and increase the profit for the company.

Q7: What core elements do you consider important within design management postgraduate study courses?

Undergraduate education of design management is not common in China, and postgraduate education is even rarer, so I cannot give you a summary. The HEIs are working on this, on this DM specific course. I believe the DM curriculum should combine the elements which both focus on the people and affairs, such as design management, creative management research, organisational management, knowledge management and the related laws and policies.

Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?

Concerning postgraduate education, in the first year, apart from enrolling on courses at school, students also need to read some recommended books which are related to the course, combined with some case studies.

Through the course handbook, students are being able to explore the views and methods of design management, through the accumulation of knowledge to improve their ability of problems of perception, analysis, and problem-solving.

During the first year, I do not agree with sending the students out to the enterprises, most of the students studied design at undergraduate level, during the first year of the MA, they need to acquire more scientific and precise knowledge. In the second year, based on the curriculum, students can develop some projects linked to their interested subjects. And the direction of the dissertation will be clearer in the second year and this year will be very hard.

Different modules need to appear through the form of assignment writing. Before the final dissertation, the study should include small thesis of different subjects, at present, only one session of graduates had finished in our school, we are still exploring. Seen from the present, it is necessary to complete the teaching through tutorials, and participate with business activities, it must be multi-dimensional. Moreover, effective guides and supervision are very important, and they are needed at each stage of the process of project management and learning activities.

Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?

In our university, at MA level, a basic knowledge of DM is no longer taught in the class; the depth of requirement is different for every design management student. The students must have a broad experience of project work and try to understand the discipline better through the project. The reason for this arrangement is that we hope the students can learn practical skills, including how to integrate design with business capabilities.

The thematic designation of DM is to include policies and regulations, participation of different professions; it is different from the learning process experienced in undergraduate study, it is to summarise the problems of projects, and give better design to the market. During this process, students need to communicate with others through an innovative method.

Competence development cannot be solved by one course, and the DM MA students should certainly practise more in a real life situation. Controllability, problem solving ability, must be learned through live projects. The key point is practice; only through the process of managing projects, could students be able to put the theoretical knowledge into practice.

Q10: Where they exist, the roles of ‘design manager’ are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?

The basic knowledge of DM can be compressed, through practical projects establishing tutorial groups and project groups. Students can also choose different teams according to the subject. The problem of many design management courses is that they are too inflexible; this is caused by the regulation and structure of HE. So, in terms of teaching and learning in DM, we need a new form to deliver the course.

Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?

This is a question of individual career planning. In my opinion, it is ideal that the MA DM students have a few years of work experience before they come to study. From that level, that's the time for them to see their future career light. Personal thinking of studying in design management on an undergraduate level, the development of the DM course may face many problems in the future.

The main problem we are facing is where the students come from. According to the curriculum design, we need to think neither too much, nor too hybrid. The entire course should attract the individual student's interest. Through the learning process, students will develop their interests and these interests can become the student's career in the future, this could enable the student to progress from a designer to a leader / a manager of design industry; or from a general manager to a professional manager of design management. Also, course planning is very important, whether our course provides a good space for the students to grow, curriculum is essential to developing students' career planning.

For example, innovation management, project design and organisation management, these courses will teach practical experiences, bring new ideas into practice through innovation to improve the working methods and working strategy. They help students to think about the problem; working with others, and solve key problems. If a person has good communication skills and the ability of control, he/she will have a chance to grow. Learning is a lifelong process, innovation is another important competency.

Design management is a new subject in China. DM personnel are urgently needed in the development process of the industry. Some DM graduates' career planning at present involves

doing design at the age of 20, and management duties at the age of 30, therefore students mostly will have to be distinguished from the ordinary designers, but will also need to start from the basic level of the job. However, some students did not learn design, but they are interested in DM postgraduate courses—e.g. design policies, rules and regulations, their aim of doing this course is more about learning more knowledge related to industrial policy and national law, and using design to meet the national/ organisational strategy, so their goal is also to become industry regulators as management talent.

The people who want to take a design management course can be split into two groups, the first group are interested in design management. Others have a utilitarian goal which is to meet the employment needs. In China, the employment of young people is becoming a wide ranging social issue. The country is under a lot of pressure. Personally, I like the students who have certain work experience and whose study background is design.

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

Culture has genes. Through design, we can see the persistence and cultural continuity. Cultural genes represent the symbols of national identity; therefore design management only works in China if DM embraces Chinese culture.

How does the West look at China and how does China look at the West? The only way to understand each other is to respect each other, and communicate. It is about how to introduce the management experiences from the West, meanwhile respecting the local culture.

China is a totalitarian society; leadership is tightly linked to education. Therefore being open-minded on DM education matters is essential. Design management is a platform, how to use these methods as a tool to help designers and managers to achieve projects by good communication, and developing widespread design management education in the future is essential.

At present, the Western world has a mature philosophy and methods of DM. The keys to improving DM education in China are the understanding and implementation of the industry. Now East and West start working together, whether private, public sectors or HEIs. Along with this cooperation, HE DME system needs to be developed more detailed, more in-depth.

CNIa2: MA Design Management Course leader; Shanghai Jiaotong University, China

Q1: What is your definition of design management?

There is no design management subject in our department. Generally the direction of study is Art of Design, if the students are interested in design management; they can choose DM as the theme of their dissertation. However the teaching and learning for postgraduate study include the design management subject and the provision of related materials.

Design management, introduced by Western countries, started late in China. I have referenced some design management books from the West in my book, such as 'Management Handbook'. The knowledge of design management I teach my students is relatively orthodox in the British perspective and talks about improving the efficiency of design of the enterprises from a management perspective.

Design through management to achieve effectiveness basically has two keys: in the first place, design should be accepted and utilised. In China, many enterprises cannot recognise the importance of design, if the enterprises do not attach importance to design/ do not understand design, then we cannot talk about design management and there is no position of design in the enterprises. Therefore, I think that through making the personality of design more widespread, it will become possible to get to know and understand the importance and contribution of design in a company.

The second key is the effectiveness of the design project. Such as through improving design quality. Design must guarantee the design quality, the problem is we start late and have a lot of professional designers, in Shanghai there are over 1000 design companies. But design in China is related to the executive's idea. From many design works we can see they are not familiar with the process of design. From the influence of the marketing and managers' thoughts, they are eager for quick success and instant benefit and do not follow design processes which may lead to a lack of quality control.

Design should have a strict process management; otherwise the understanding of design and quality assurance can easily go wrong. How can we manage design projects as an important

substance? How can we manage design teams and inspire design skills? How can we control the design process? One of the most important aspects of design management is to work hard on the process control, if this happens then the quality is more assured. Thus the crux of design management is how to improve the quality of our design through project management.

Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?

Overall from a long-term perspective, design management has the prospect of development in China. Currently, along with the fast economic growth of China, the senior level of national leaders and governments are promoting many independent brands and enterprises based on domestic resources, as an extensive mode in economic growth. The nation is aware of the need to enhance the ability of independent innovation in China, which improves products and brands through design and independent product development, in order to improve the position in the market; even in the competitive international market. There is a power and quality of the monolithic policy, this is a general trend and indeed has an extensive future.

The challenge for the DM development of Chinese companies is that most businesses do not have a strong sense of design. We investigate two aspects of enterprises to enhance DM education:

First, the environment of independent innovation is poor. For example, intellectual property protection of innovation achievements is a big problem; the law and institution of intellectual property protection are not robust. And this could harm the design initiative; they prefer to copy rather than try hard to create and innovate. Because it is easy to copy, design knowledge is not being explored adequately. In the past, we did not have the education about this knowledge; as a result, it is hard to put design in a very important position.

There is another imbalance. Although overseas-funded enterprises and products are paying a lot of attention to design, most domestic enterprises are still lack understanding of design. The environment is badly influenced in the enterprises. Some good companies are facing the pressure of international competition, and realise the needs of improving design innovation and quality to increase their competitiveness at an international level; such as 'Haier'. They recruit and train design members, hire a large number of professional designers, but the number of such companies which has their own consciousness to improve management through design is very rare. We certainly need more mid-sized enterprises to realise the importance of DM.

Q3: In your opinion, what is the difference between design management and design leadership?

There is a certain relationship. If design management focuses on the business strategy for enterprise business and how to use design capacity well, it can improve design leadership. Leadership involves the performance of design science; it is powerful and plays a leading role, especially related to the performance of design capability. Good design management will enhance design leadership, dealing with many issues, such as design orientation; which is placed in the leading position of design. Lots of resources are needed to meet the developing needs of design, and this would endure design leadership, the relation interplaying and have 'Where to go' and 'How to do' processes.

Q4: In your opinion, what is the outcome of design management role in the public and private sectors?

The role is how to use innovation resources to achieve business goals. Good innovative application contributes to the development of the company; otherwise, there will be a loss and it will affect the implementation of the target. The role that design plays varies from one company to another.

Q5: In your opinion, how can design be merged with best management practice?

Design management must combine a purpose to achieve commercial goals. Using a design management model to achieve the strategic goals of the enterprise is crucial.

Management ability is decided by the managers, they are all different as they are at different levels. It is important how managers think about design and this is related to the design management capability of the enterprise. If the business leaders and managers do not understand design, or do not have sufficient understanding of DM, then they will not invest in the design effort fully, therefore the designers cannot play their role.

Thus it is very important to educate management leaders in the value of design; otherwise design management cannot play a positive role.

Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?

Design management course can sit both in Design and Business schools. Based on my understanding of the situation, I hope design management courses can rest in Business schools in China in the near future; this is very important and crucial. Design management courses in design schools can help the designers to pay attention to management, yet the management subject range is not wide. Regretfully, there isn't yet a design management course set in a business school in China.

Some business schools have the subject related to product development and innovative content. However, it is particularly significant that business schools get involved in delivering design management knowledge. The completeness of product development is not only dependent on the managers/engineers but also the designers. Without design management knowledge it will be impossible to complete, there is no way to achieve the maximum effect. On the other hand, I would like to do something I could design a school, which introduces a postgraduate design management course and hope students from technical institutions and business schools can come to learn, too.

Q7: What core elements do you consider important within design management postgraduate study courses?

Generality on the 'design' side perspective, the study should involve design strategy, tactics, and project management including team communication, the solution of project process, design methods, I do not talk about this in depth, case studies should be emphasised. Moreover, at postgraduate level, we need to recommend a list of books for students to read, for example my book 'design management', specially the second edition includes more case studies, methods, charts and frameworks.

Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?

The main question concerns practice of design ability---how to combine design perfectly with the practical ability of design management that we have in 'silent design'. There are different types of knowledge supporting DM, such as science, business and engineering. As a study result we organised teams and set up projects to analyse the enterprises, generally speaking, it is not easy to improve management ability through specific courses, it is necessary to find

some efficient study methods, such as case studies.

Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?

Designers need to understand management, leaders and managers need to know the importance of design, and in addition, they both need a deep understanding of design knowledge and management skills. The most important reason why some large companies such as Sony and Panasonic are successful is that the leaders understand design innovation.

Successful companies run through the theme of innovation. Enlightenment and development cannot be separated from design innovation, there are many designers who develop new products and expand the company, so most of their work is beneficial to innovation. Management must be conducive to innovation, to arouse design innovation, design communication and design training, such to have discussion and e and provide an atmosphere which permits an exchange of ideas. If leaders do not understand design, without consciousness there is no way to do it, and this is the key.

Q10: Where they exist, the roles of ‘design manager’ are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?

The best way is putting students through specific projects. Undertaking live projects will help students to find out the problems through searching for knowledge and requirements of design management. For instance, in our course, we conduct enterprise analysis, we have case studies in the class, we discuss team management, resource management and send students overseas to understand the situation there. Practice resource for design graduates is to put the students into real life industries.

Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?

There is no particular system we are running with to balance the relationship between short-term usefulness of graduates and longer-term educational benefits. We mainly rely on case studies and the students need to grasp more practical experience for themselves.

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

The teaching mode in the West is very matured /structured; it seems different in China, currently the Chinese DM education should focus on its own theoretical system. It cannot copy the Western mode completely, as a start, we can adopt good models from both the UK and the USA, and then transfer to the system in China to define our system. This should be in line with the cultural background and humanistic environment of China. The model can be introduced, but not replicated completely. We can disseminate information and develop the course system at the same time.

There are many problems in connection with universities and enterprises in terms of teaching and learning in DM. It is necessary to strengthen the framework completely; in this case we need communication between the two. Ceaseless exploration is needed to meet the needs of research autonomy and design management must combine with enterprises. Students in class can practice in-depth for feasibility validation, inspect and verify their aims, methods, and effects, in line with the company. Our curriculum provision is relatively complete; business or design, we need to learn both. But it is hard for undergraduate students and it is not easy for them to get employment opportunities.

**CNIa3: Design Management Guest Lecturer in MBA, Shandong
University of Economic, China**

Q1: What is your definition of design management?

The fundamental base of design management is management; DM is management in the context of design and design project. At present, design management is applied in enterprises and institutions; however, it has not yet been formed into a consummate system, especially the system from professional training to put these talents to the industry.

Management quality has two properties; shown in both a scientific and artistic way. Artistically, the managerial approach emerges in many streams among a variety of enterprises and institutions, it is a process that sums up these methods and puts them in a textbook or teaching plan; and then imparts it to the students. Scientifically, learning related knowledge is the task of design management; we cannot strengthen training efforts without practical experience. Therefore DM should be associated with practice.

Q2: In your opinion, where does the future of design management lie? What are the challenges and opportunities?

Currently, there are still many things that need to be done by academia in terms of DM. We need an interdisciplinary subject which combines design and management-- designers must understand management and managers must understand design.

Design management students, first of all, must be aware of the knowledge of management, such as organisational management, organisational behavior, human resource management, marketing, etc.; with all the regions exploiting their own particular advantages. In addition, DM must include financial affairs in the DM project process. Without counting the costs, design management has no significance. Moreover, it is necessary to understand the principles of management.

Let's look at the design management discipline in China. There is not yet a matured system in curriculum provision. The universities/institutions may need to conduct market research before setting up their curriculum. We can also invite business people, professionals both in the design

department and relevant departments and encourage everyone to sit down together to discuss what skills the students should learn and grasp when they finish studying and get ready for work.

Firstly, is to set the order for learning. For example, financial management comes before accounting; introduction to management comes before organisation management. The reason is there is an inner link between the theories. Therefore the biggest challenge comes from the commitment in this process from educational institutions.

A good example is the development of a culture industry project in Shandong province. Your University also undertook some design related sub-projects; however no one can say 'I am talented in culture management or in arts management.' Why? this is due to us not having such a system of education in the past, she/ he maybe had professional design training before, but management skills were garnered through later learning through a variety of channels. Therefore DM education requires knowledge at school to develop inter-disciplinary talent.

Q3: In your opinion, what is the difference between design management and design leadership?

Design leadership is one aspect of design management. There are four functions of management: planning, organising, leading and controlling. 'Leadership' is roughly between the direction, control; not planning, nor organising.

Q4: In your opinion, what is the outcome of design management role in the public and private sectors?

I think it should be integrated and transferrable. For most sectors, design jobs are normally outsourced. The roles of design managers are normally to: a) figure out the purpose of the project. Design managers need to combine the purpose with enterprise, based on the cost and actual situation, (e.g. national customs, national circumstances), it is necessary to make this information clear to the professional design department. b) Contrast their proposal with a design manager's initial idea; adjust the proposal through an exchange of opinions until the project is complete. So far, some big Chinese enterprises have achieved an international standard of management system in design. Like Haier, it has a clear definition of their duties and responsibilities.

Nowadays, public and private sectors have started to focus on design management. Although many of them do not know what kind of people they need, nor how to arrange the work specifically. In fact, we should get some project related experts to lay out all the resources within their own field, and analyse the advantages and disadvantages in the premises of state's laws, policies and regulations. They should sit down and openly about resources, and come up with a proposal after the discussion. Taking into consideration constraints on natural resources, financial resources and approval from the local authorities, these experts carry out the plan and process the second prototype, and then the plan will be refined and implemented. The next step is to build up the design team with industry managers and planning directors. After the market research and improvement, a project plan and blueprint can be finalised. This is the basic process of DM.

Q5: In your opinion, how can design be merged with best management practice?

Whether in the cultural industry or a single design project, the role of design management is comprehensiveness and transformation. In the process, design works as a part of design management; management is another aspect of design management. Management may run through the design process and the ultimate target is design. In this specialised field, management is a kind of tool. To meet the needs of the enterprises and institutions, the skills mentioned above required by graduates can be divided into two main aspects: firstly, talented designers with management knowledge and skills; secondly, understand the discipline of manage and process design.

Q6: In your opinion, should emphasis for the study of design management rest with design schools or business schools, or should a more integrated approach be adopted?

Learning DM in a business school is better. Design management should mainly appear in business schools, learning design is for the purpose of better management; not learning management for design.

In DM, we require design students to know about management and business students to become aware of design. However, it is relatively easy to select design management talent from the design field. Often designers understand the sequence of design itself and are capable of certain administrative tasks in design projects. Designers, group leaders, directors and industry CEOs; these people need to learn a certain amount of management knowledge in order to manage the team better. But if I was a manager and someone forced me to manage a design project, it would be a bit difficult for me because design involves elements of art and it is

unrealistic to learn it in one or two of days.

In like manner, the skill of management is hard to train in a very short time. Frequently, designers do a lot of administrative work in practice. For example, if I am a general manager and I have been managing the business for many years and now you ask me to study design in a short time, there is a problem.

Therefore, there are two channels for DM education approach: first, distinguish manager talents from design talents; second, the managers may not have to know design very well but they can certainly work closely with designers.

Q7: What core elements do you consider important within design management postgraduate study courses?

The most important aspect of DM is marketing management, because the designers in the industries are designing for market needs. Therefore DM teaching and learning methods should be based on management related studies.

An enterprise is unlikely to employ students directly to management positions without any work experience. Students who graduate have to do some odd jobs in the beginning and the employer will not give them a team from scratch. These students cannot structure design plans and strategies straightway, they also need to collect as much information as possible which relates to industry.

However, this question lies with the attitude of the current community of how to maintain and encourage the DM professionals.

Q8: What are the necessary relationships and contexts of knowledge that allow students to develop their design management ability?

Few people discuss management knowledge in an art and design school; in the same way, there are few people who discuss art knowledge in business schools; it is difficult to have this atmosphere. Just like business teachers are occupied with leadership, art teachers teach the students design skills and knowledge. Everyone has creativity and innovation in their perspectives.

Design management is not only applied in a project; its innovation is not design itself, because innovation relies on organisation, motivation, work methods and a stimulating and creative team atmosphere; its creativity comes from these people and integration. Creativity needs to bring other people into play.

It is better to study design management in the context of design and through work experiences. MBA is a very good model to apply DM.

Q9: How do you locate the role of creativity and tacit knowledge to design tasks in design management courses?

When we look at curriculum provision, we talk about creativity, innovation, teamwork and leadership; these abilities run through the course and are impregnated with project management, organisation management and human resources management. Apart from basic knowledge, personal ability is also very important.

Q10: Where they exist, the roles of ‘design manager’ are extremely varied, depending on the type of industry and company. What is the key to developing curricula to meet the various needs of industry?

For the roles of design manager, there are two aspects at the moment—‘design’ and ‘management’. The first skill a DM student needs to exhibit in order to enter a society is design, and then management. However, if there are no ‘entry skills’, students certainly couldn’t have a management job straight way.

Therefore, in the school, integrating design and management subjects is very important. There is a way that may consider cross- subjects. This means the business students can go to art schools to study artistic skills and understand what design management is. This is to say, understand the process of design management, what elements are required by design and what processes are required. Currently, why are there more art schools and fewer business schools concerned with this system? That is because design schools are more likely to know design’s management needs.

Cross-subjects are difficult to set up as the problem is caused by the structure of education. I suggest the assignable time of learning in design schools and business schools is 1:3, exchange study and study abroad can also be considered. If we put national policies and regulations aside, interdisciplinary management is in first place and design second; it is more free-flowing for

doing so in business school than design school.

Q11: In terms of curriculum development, how do you balance the relationship between short-term usefulness of graduates and longer-term educational benefits?

Demand in the short-term is the demand for employment. National policy and the economy require students to have practical working skills. A long-term gain is how to use and upgrade existing knowledge in practice. Thus, the course arrangement needs to attach great importance to social needs and soft demands of knowledge for integration into the society.

Q12: In your opinion, what is the key issue of successfully transferring design management education systems from west to east?

Enterprises have begun to focus on and become aware of design management. Though they have the consciousness, they do not yet know what to do specifically and what kind of people they need. What's more, feasibility must be full and accurately implied.

Appendix 3-3:

Interviews Transcripts of Design/ Management Individuals in both Public and Private Sectors in China

Interviewees	Organisational Institutions
CNi1	Head of External Service Centre of Promotion Bureau, Shandong Provincial Government, China
CNi2	Deputy General Manager, Shandong Provincial Business Group, China
CNi3	Senior Editor, QILU Press, China
CNi4	Film Producer, Shandong Sky TV, China
CNi5	General Manager, Shandong International Advertising Consultancy, China
CNi6	Director, Beijing Murano Art Consultancy, China
CNi7	General Design Engineer, Shandong Architecture Design Institution, China
CNi8	Director, Jinan Suochi Design Management Consultancy, China
CNi9	Design Director, Industrial Design Centre, Hisense E-information Industry Group, China
CNi10	Senior Customer Experiences Design Manager, Microsoft R&D Group Beijing, China

Questionnaire

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

问卷

问题 1：您认为设计管理在企事业单位中所扮演的角色是什么？

问题 2：在组织环境当中，您认为从设计管理理念的思维到设计管理的执行的关键是什么？

问题 3：为了应对行业的需求，设计管理的毕业生最关键的技能有哪些？

问题 4：这些知识和技能如何对接到实际社会环境？

问题 5：如果您来设计设计管理的课程内容，其中的主要组成有那些？

问题 6：关于发展设计管理的研究生教育，您有那些建议？

**CNIi1: In-house Head of External Service Centre of Promotion Bureau,
Shandong Provincial Government, China**

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Design management combines resources with ideas and concepts. Currently design favours the development of multi-direction and systematisation. This requests design management students not only to study design related knowledge, but also the design career plan, particularly the occupation plans for young design managers.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

To successfully integrate design management thinking and practice into an organisation, the current design management training model needs to be changed to bridge the significant gaps between design management education provision and industry needs. It should be undertaken in two ways:

- 1) Design management teaching objectives deriving from school, society and industry needs must be provided and skills effectively coordinated and communicated;
- 2) Furthermore, training the practical skills students need to manage design efficiently must also be provided.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

Excellent professional skills, such as design and market knowledge.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

The first is the abilities to integrate into society. Young people in order to be accepted by society must achieve the standards expected by society. The abilities refer to: optimism, good communication skills, and being able to get along with others, and rapid integration capabilities closely, followed by the peace of mind, which means not rush to obtain returns, and seeking instant success.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

I think deepening the industrial chain can effectively expand employment space. As for school, in terms of the direction and mode in personnel training, it should be focusing on the space and capacity of employment. For example some courses are aiming to develop, communicate and demonstrate the potential value of design and branding. Preparing students from design and other creative disciplines to design innovative strategies is paramount. Design management features needed to find employment are closely linked to direction creative disciplines take.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

In China, the curriculum, teaching hours and credits are basically determined prior to the course beginning. In some postgraduate study, there will be no change within one's study period (three years). However, in the rapidly changing social environment, the question of how to effectively integrate and reflected the needs of the society in teaching and learning is becoming more pressing. This requires strong school leadership and an understanding of change and professional support, as well as the needs of academics to promote its implementation. The teaching and learning content of design management necessarily has to meet the needs of today's society, but also the future development of design management knowledge to meet social demands. This is certainly beyond simply 'teaching' and 'learning' relations.

**CNi2: Deputy General Manger, Shandong Provincial Business Group,
China**

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Each job has its own responsibilities and peculiarities and design management is no different. A design manager requires abilities to be innovative, as well as project implementation capacity. However, depending on the company and industry, the requirements of being a design manger will be different.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

Any product or service that a company makes for profit should first have its market demand and recognition of consumers and users. I understand that the pursuit of designers and artists is not the same. In a commercial environment, the design of products and services must have a market; without a market, design would not be able to survive.

Secondly, I think that customer demand is the priority. Effective design should be based on customer requirements, and transferring into innovative design. Design mangers should manage design to meet customers/users' needs, whilst providing products and services above the demands, and expectations of customers/users.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

In terms of the professional skills needed by design mangers, in addition to the knowledge of design and business studies, they need a wide range of knowledge such as engineering and the humanities. On a personal level, it requires corporate loyalty and, in particular a persistent and resilient personality. In fact, design seems a simple subject, but it covers a wide range of disciplines such as national policy and legal regulations. Thus requires combination of real life experiences and professional knowledge.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

The wealth of experience is very important for design managers based in enterprises. It requires a design manager be open-minded, innovative and activate. I personally see more graduates from graphic design, packaging and advertising subjects. However I think a design manger should be familiar with company culture, job responsibilities, as well as the ability to constantly adjust their sphere of knowledge according to the company's development. From the current economic downturn situation, the quit rate was significantly reduced. Most companies do not like to see their staffs leaving after the company training... after all, the design manger must first understand corporate culture as this is reflected in design projects. However, successful design projects need to meet not only the requirements of corporate culture, but also understand customer and market needs.

Design is not only about creativity however, it combines with specific industries and infuses ideas into systematic process for further development. Only by educating students in this way, will the demands of social needs be met.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

Different industries have different needs. At least the DM course should include studies of design and design trends; also the perception and inspiration of design. In addition, the culture / /cultivation study is very important. In general, the study course should equip students' comprehensive quality.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Using 'teaching practice' ideas to solve the current employment problem may be considered. We also need to explore how to link the knowledge that students have learnt to the reality. The scope of design definition is very broad and thus results in a lack of professional expertise in design students; I think it should be further subdivided, to further integrate actual job requirements and school education. Targeted courses could help solve the employment problem in the organisation. This is not a fix for any particular enterprises or individual schools, but rather to build a communication platform to fill the gap between them.

CNi3: Senior Editor, QILU Press, China

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

The role of design management is to promote design as a subject to logistics management. Design management is a relatively new subject in China; however design management function already exists in different organisations, only because we do not have a clearer understanding of it.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

- Graduates working in the industry should infuse the expertise elements, including the accumulation of professional knowledge from the school to the working industry.
- To adapt graduates themselves to societal culture and industry culture. The challenge of becoming a design manager in industry is to meet the comprehensive capacity of the society; this capacity is reflected on the team awareness and adaptability in the organisational environment.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

The key aspect of design management personnel should have, I thought is the ability to master related knowledge, for instance the knowledge of design, marketing and creativity. However, the idea of 'creativity' should emphasise the assurance ability of real life design project.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

- The understanding of design management education and social needs of design management should be the same;
- Design management knowledge that students learn in school should correspond with the organisation's design management aspects;
- Design Management students should strengthen the knowledge of social trends, to grasp the design thinking and cultural influence.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

Design management philosophy and mode of programme operation is designed to implement 'design' as the central role in society. As far as education is concerned, it is important to determine how this effect is conveyed, so that more people understand and accept design management. There are still huge gaps between school education and the reality of today's society, but the proposal of the concept of design management education can promote the industry to think, and then hopefully reach a consensus.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

As to employment difficulties in design industry, the key point is that universities don not understand real social needs. Schools and businesses develop a shared responsibility of design managers. Largely, business means profits, profits are promoted the business environment or a specific business process. But the reality is that schools promote their own values too. So the traditional sense of school education and business logistics are isolated, and design management professionals should try to break this pattern. Development should ask from education to industry, in order to help companies develop design projects. The cooperation between schools and enterprises to cultivate innovation designers is definitely a positive step in the right direction.

CNi4: Film Producer, Shandong Sky TV, China

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Design management is how to control the management of design, to inspiring and communicating in a design project, and dealing with departments and related aspects of the relationships.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

The management of design in business must meet customer requirements and the further premise of a design project therefore is to conduct market research.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

Apart from solid professional knowledge and broad horizons, design managers should also have peace of mind, a solid non-impulsive attitude. This is particularly true of innovative design teams, communicate, and accept recommendations.

One of the primary attributions of a designer is a lust for life. As these remains a fundamental need to consider problems on customer's viewpoint as well as adding their own innovative thinking to make design widely acceptable.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

Commercial design and management is directly related to personal working experience. Therefore design managers must effectively understand and experience the actual environment.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

Strong comprehensive ability and broad knowledge.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Firstly is to give students more practice opportunities. Such as company placement. It would provide opportunities for design management graduates to grow better abilities in career planning; it also would produce a new type of educational model (short, flexible, and effective) between design institutions and industries.

There are large numbers of designers in the industry, including design graduates, showing their lack of understanding in relationships between design and business. Therefore short-term training becomes a popular way of learning.

CNi5: Design Consultancy General Manger, Shandong International Advertising Consultancy, China

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Design has its unique role in the business environment; it is the 'design' which has been 'limited'. The basic requirement of 'Design' is to be 'artistic' and 'beautiful'. However, this explanation of 'limited design' means design works to constraints of form, rather than other equally important facets of the design process. However, certain commentators suggest that design in the business environment is not necessarily restricted, but achieves a kind of cognition depending on the path being taken. Designers need to realise the implications of choosing a certain path requires experience of real life business and a commercial knowledge of design.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

Ability of DM implementation in the actual business environment.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

Designers who exhibit compound knowledge are what the design industry needs. This means that designers should not only handle basic design skills, but also know about design strategy, planning and marketing.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

One of the greatest issues arising between the students and industry is the apparent mismatch between the knowledge learned in school and actual needs of the organisations. For example the modern advertising industry is no longer the stereotypical one it is often assumed to be. It is not just a logo, or a design package. To attract customers, it needs attention from design proposals and design presentations, to team working. Otherwise the company will lose customers. Therefore, the requirement of the abilities of design management students should include: professional competence and generalist abilities, such as a depth of industry knowledge, design ability, the ability to grasp the design concept, as well as a capacity for insight into market areas (such as real estate, finance, IT and media). The knowledge needed to succeed in the design industry is complex and so design management education should provide subjects which meet the needs of the organisations.

One comprehensive ability and extensive knowledge are very important for being a design manager. Design works and projects must be related to one's personal experience. If there is no insight into one's personal life, no experiences in one's life, then the design work is superficial. Only people who know how to enjoy life will make designs which are more acceptable to the public.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

1) Multiple knowledge under a complex structure. By definition design managers are necessarily a design expert, but also exhibit a strong understanding of planning, production, marketing, engineering 2) innovative ideas 3) the ability of teamwork 4) perseverance and a powerful psychological ability.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Because of the emergence of the new term of 'creative industry', it seems to misleading, also extremely interesting that the 'animation' subject is the flag ship of the creative industry. This has led most of the government's industry support fund missed the mainstream of creative industries. Such as advertising- although the advertising industry is a major creative industry in China, but is not entitled to government incentives. This causes lack of strong local brand-building, human resource constraints on the advertising industry. This affects the industry's output growth become very slowly. So that employment placement of graduates is limited in advertising industry. On the contrary, the blind expansion of the university students in design-related professional has doubled the number of graduates.

Design is part of the creative industries and innovation is at its core. Most graduates hoping to work in the design industry only have basic design skills. It hardly satisfies the needs of the community. Therefore, this has led to design students constantly competing for jobs; or choosing to continue their study at MA level.

This also shows a lack of confidence in the graduate's employment. In turn, graduates need the support of relevant national policies, such as policies to promote the industry and university admission requirements. In terms of the students themselves, there is great concern on enhancing their innovative behaviour and creative thinking; otherwise, they are practically nothing more than craftsmen.

**CNi6: Design Consultancy Director, Beijing Murano Art Consultancy,
China**

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

I have never directly studied design management, but I have been dealing with art management; in terms of art-related industry management in my own gallery, and of some of the arts gallery institutions.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

Industry-lead is the most important factor of successful design management. In China, according to China's industrial development, development of creative industry is the most important domestic/national policy, and design is a relatively large part of the creative industry. Therefore, appropriate design management must be developed in advance in this system; however there are not yet any mature design management models/systems have been established in China, thus normative professional management in DM seems essential. In other words, successful design management depends on the development of design industry, and also successful design industry is corresponding to appropriate management.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

Any project design involves design-related profession as art is a variety subject of combinations, especially when we look at the leadership of a design project. A design project not only involves aesthetic comprehension, as well as the ability to manage human resources, finance, communication, teamwork, and leadership.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

As a design manger, in industry, she/he has to understand different professions, such as finance. Design management is the management of design business content, design must be managed within the domestic/business market; therefore requires a clear understanding of the market, with overall strength and direction of the grasp.

As an artist; I have to manage. I have to learn my lessons from practice, therefore to gain the experience from management. As a manger, I have to be artistic, in order to be a better manager.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

Design mangers should be working with a broad knowledge base, such as advertising, media, marketing and consumer psychology. Schools should set up relevant courses, and be taught by experts-these are two crucial points. Nowadays, most schools lack teaching resources and this has significantly affected students understanding of knowledge. In fact, the market does not lack of professional graduates, but the best are highly sought after. Therefore, design management career experience is the key for most design mangers.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Execution. Design management is the most reliable guarantee of execution! Design industry has particularly large internal divisions, with particularly variety of subjects. DM study must be targeted, with more in-depth skills for each design industry sector. Skills can be shown through real-life design projects, such as a large-scale relief work, it will involve a content of firing process; production process; installation process; technology; effect control etc.. The bigger large-scale works, more communication, more comprehensive capabilities, more commitments are required, as well as abilities of teamwork, and project control.

**CNi7: General Design Engineer, Shandong Architecture Design
Institution, China**

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Design cannot depart from the concern of understanding market and company demand. Design management is a suitable platform for connecting design and business whilst focusing on the urgent working abilities of designers' needs.

Design skills provide a further foothold for designers in design management profession. Other requisite skills include the ability to change in technology, management, and leadership. Marketing and strategy are equally very important.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

You can see a great future of design management in China- Specially a great prospects for development in design management along with the development of creative industries. It comes to the question that follows, we have such a platform to develop DM, all the countries are concerned about China, however our understanding of design must be strengthened in the suddenly and quickly developed Chinese society.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

Design needs to complement of related disciplines, such as engineering, management, production and business.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

The key for our graduates is to strategically balance the relationship between design and management. The industries out there require our designers not only design skills, but also to manage a project as a designer, she/he needs to have the management tool steam to bring the team, project and process together.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

We are, after all, in business, and hope that design graduates take the shortest time possible to engage in design project work professionally. However, new graduates are normally lack of self-confidence in design, as well as social, market and other contact experiences. I think students can practice these aspects through ways such as placement; it will enable them to enter the social role more quickly.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Enterprises have a profit-oriented side. In this perspective, the teaching and learning of design management higher education must adapt to meet social status and needs. This requires the practical ability to exercise the students; schools should provide students with the opportunity to practice. In addition, the design of business knowledge is the key, which is inseparable from the market's attention and understanding of the needs of the enterprises.

CNIi8: Director, Jinan Souchi Design Management Consultancy, China

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Design management knowledge is extremely important for a designer. However, it requests designer a full scaled development to be a design manger: it including both the design specialised accomplishment; also abilities to communicate across a myriad of societies and culture; exhibiting the abilities that meet market needs. However, like every profession, it requires specialised knowledge support as its core foundation.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

Innovation is the power of enterprise development. Power should be based on survival. Under the premise of survival, innovation is the driving force for development. CEOs set the directions; innovation is the engine, keep it updated.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

Key skills are fundamental design skills; management processes; project control issues; and innovation. A lot of leaders in design and creative industries will be thinking the way of their DM employees: as a DM manager, he/she has to liberate, with fully understanding of art and design; as well as the knowledge of production process; marketing and finance to the financial... after all, she/he has to be familiar of design relevant knowledge. Like a lot of talented mangers could do the management job brilliantly, but without design relevant knowledge, it is very difficult to manage a design team. Perhaps to the managers particularly, without the understanding of the management of design, then her/ his management ideas are not necessarily suitable for design-related industries.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

To let designers/ design mangers to implement their DM knowledge, the only way is to practice in the actual environment, within a real team.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

Two parts, and then down to several modules. Design management can be considered to divide into design part and management part, which need to be organically combined. The industry requires students to understand management, also a sound design management system.

Therefore, design management courses need to be structured clearly: management, design and cross-disciplinary part. Furthermore, the design related study needs further specific classification according to the industry needs.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Cross-disciplinary development is crucial. For example, operational course study can help with the students to find their direction of DM professional development. Currently, many schools did not draw enough attention on the benefits of teaching & learning by practicing. This requires a process; therefore universities must establish a curriculum system specification.

As the verity of teaching aims and objectives from different universities/DM courses, many DM modules are interlaced. For example, students use the research methods into innovative and creative thinking. The point is how to combine knowledge but merely repeating.

CNi9: Design Director, Industrial Design Centre, Hisense E-information Industry Group, China

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

All-rounder + professionals

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

Companies, like design management 'professionals', have their own successful experience and knowledge of design management including the 'hardware' and 'software'. They can engage with team immediately, and make great improvements in the company's design operations. However, 'generalist' normally concerned with the 'width ' but not 'depth', for skills although it is easy to adapt to the corporate environment, however, they find difficult to lead the team without professional skills in design.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

I think the design managers in the current industries can be divided into three categories. 1) Graduates just entering the industry, whose the advantage and strength is being 'imaginative', we encourage these kind of design managers to learn 'convergence'; that is, control ability. 2) Over time, the transition to the middle management level of design manger, that is, design managers are very clear and mature with the scope of their duties. 3) To the senior design manager, we promote as the 'let go' ability. Innovative capability is the core competence competing among enterprises, however, some senior design managers who have been in the industry for a lengthy period of time may have 'limited' their innovative ability after years in the same job routine, this 'let go' policy is aiming to 'release' capability that integrating innovative design to meet the market needs.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

One of the most important requirements of business professionals is to adapt to market demand. The current vicious cycle of education and business is that: more and more students are finding it more and more difficult to find employment; at the same time the requirements graduates need to enter market is increasingly demanding. In terms of design management students, they require 1) strong professional skills, and also 2) adaptability to the social environment at large as well as smaller environment of the company; finally 3) their own positive personality, be good at team working, and also a fast learner.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

The foundation is design and design related knowledge. And then study related to marketing, organisation, innovation, and teamwork.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Through effective teaching methods, students can learn skills such as communication, innovation, practice, and build teams. It is also very important to encouraging students learning by practicing, enabling to combine above skills throughout practice.

CNi10: Senior Customer Experiences Design Manager, Microsoft R&D Group Beijing, China

Q1: On reflection what do you consider the roles of design management in both the public and private sectors?

Many people think that a business logo or the end product makes branding, however to build a brand is far beyond this. The most important value of 'commerce' is the creative process, the process takes from concept to design, and finally to the whole process of the customer experience. The end products don't mean the end of design until the real interaction design results from user's experience. Thus, design management is the experience of this whole journey.

Q2: What would you say are the key issues of successfully integrating design management thinking and practice into an organisation?

People-oriented. Design management process is continually updated and the process of development—through the process of Innovation - Experience - Modify – and Upgrade.

Q3: What are the key skills that design management graduates should have in order to meet the various and future needs of industry?

I think every individual is creative. This means not only designers can be creative - it requires that the design managers must come from different social backgrounds and professions. This is so-called 'cooperative' design. Simply is because that every profession can cooperate with design. It is also the theory of design management--to integrate people together to design.

Q4: In your opinion, how do the graduates apply these key skills to the outside world?

Experiencing, practicing, and communicating.

Q5: If you were to develop a postgraduate design management course, what key elements would you consider vital for inclusion within the curriculum?

Apart from the related disciplines of design and management, DM study should highlight the appropriate cultural foundation, such as design process; design experience; teamwork; and innovative/ creative thinking.

Q6: In terms of development in postgraduate design management education, do you have any further suggestions?

Experience teaching. Design management needs to tap people's real needs. Talking about design management education, design should never appear as a separate subject, students should have the ability to manage projects, this is fundamental. However, universities have different approach in DM teaching and learning. In the UK, design management course run in both Design Schools and Management schools. They have different learning outcomes with different requirements.

Appendix 4-1:

CVs of Leading Academics in the UK

CVs of Leading Academics in the UK	Organisational Institutions
UKIa1	MA Design Management Course Leader; Northumbria University, UK
UKIa2	MA Design Management Course Leader of Birmingham City University (BCU), UK
UKIa3	MA Design Management Course Leader; Salford University, UK
UKIa4	Former MBA Design Management Course Leader; University of Westminster, UK
UKIa5	MA Design Management Course Leader ; Warwick University, UK

**UKIa1: MA Design Management Course Leader; Head of Taught
postgraduate Studies and Continuing Professional Development;
Northumbria University, UK**

Her Bachelors degree is in Fine Art from Leeds University. Here she gained a field scholarship to New York in her final year, to study the development of figurative painting into abstraction in the work of Arshile Gorky. This focus on the transition from figurative to abstraction was explored in her practice and final show. The point of abstraction and intuition remains central to her research today along with the relationship of theory to practice.

Research Interests

Her research interests explores the pedagogical implications of the paradigm shift that HE Design Education is currently experiencing - moving from Teaching and Learning to the 'Business' of Design Knowledge.

This builds on earlier works from a 10 year span, exploring a triangulation of themes: strategic renewal and change by design (DMI conference Boston 2002 and D2B Shanghai 2006) craftsmanship, skills acquisition and pedagogical approaches (NCECA 2000 Denver, NCECA 2003 San Diego)

She uses a design management perspective based on a design craft practice background and an academic role that seeks to develop an optimal, germane, contemporary postgraduate learning framework in the context of knowledge based learning and viable resources. This design management approach integrates design thinking and commercial and social innovation practice.

Key Publications

The Design Postgraduate Journeyman. Mapping the relationship between Design Thinking and Doing with Skills Acquisition for Skilful Practice. International Association of Societies of Design Research. Oct 18-22 2009, COEX Seoul, Korea

The Three Headed Monster of Higher Education. CLTD 5th Annual Conference 'Challenging the Curriculum' ,12-13 April 2010, Tiergarten Berlin

Enabling a Community of Practice: Fostering social learning between Designers and Design Managers at Postgraduate Level. CLTD 5th Annual Conference 'Challenging the Curriculum', 12-13 April 2010, Tiergarten Berlin

Full list available at Northumbria Research Link (NRL)

Teaching Interests and Modules

MA Design Management

Academic/industrial partners

Honorary Professor Shandong University of Art and Design, China

UKIa2: MA Design Management Course Leader of Birmingham City University (BCU), UK

He is the Emeritus Professor in Design in Design Studies at Birmingham City University, Institute of Art and Design. His PhD and early work as a research fellow at the Royal College of Art centred on the specific problems faced by technology users in the creative industries.

He has published widely on theoretical and social aspects of design and technology. He is a Council Member and Fellow of the Design Research Society, an Associate Editor of the Design Journal and a member of the Arts and Humanities Peer Review College. Bob was the Principal Investigator of the major AHRC research project concerning Risk, Risk Perception and Design. He has directed major research into Fashion Culture and Consumption and Work-based Learning in Art and Design. He is a research consultant for a number of international publishing groups and several UK and overseas universities.

Experience

Emeritus Professor, Design Studies Birmingham City University Educational Institution; 1001-5000 employees; Higher Education industry

Groups and Associations

Birmingham City University Alumni (aka University of Central England in Birmingham, UCE)

DMI Design Management Institute

Design Management Europe

Design Research

UKIa3: MA Design Management Course Leader; Salford University, UK

Key Memberships

Full Member of Research Centre: Heritage & Design Innovation Centre

Profile Summary

She is currently programme leader for the MSc. Design Management programme in the School of Art and Design, University of Salford. She is actively involved in research in design management and has worked on a broad range of projects, including an AHRC-funded "Design 2020" project which explores the future of the UK design industry in coping with the uncertainties of 2020; an EU-funded "Asia Link" programme which aims to develop collaborative curriculum in design management; the British Council's "Prime Minister's Initiative for International Education" (PMI2) concerning student employability and entrepreneurship; and the School's "D2B" (Design to Business) International Design Management Conferences. Before commencing her academic career, she worked as an in-house product designer, and for a number of design consultancies in China.

Key Qualifications

2010, Postgraduate Certificate in Higher Education Practice and Research PGCert from University of Salford.

2006, PhD Design Management from University of Salford.

2001, MSc. Industrial Design from University of Salford.

1996, BEng. Industrial Design from Shanghai Jiao Tong University.

Key Projects

Design for the UK and Chinese consumer markets, 2010Mar. Research Councils UK, £12,000.00.

Key Publications

'The Conception of Branding in not-for-profit SMEs', International Journal of Management Cases, 2011.

'Embedding employability in the curriculum: A comparative study of employer engagement models adopted by design programmes in China and UK', Journal of Chinese Entrepreneurship, 3(1), pp.36-48.2011.

'A Theoretical Design Management Framework ', The Design Journal, 14(1), pp.112-131. Book Sections, 2011.

'The Means End Chain Approach to Market Segmentation & Brand Positioning', in: Liu, G Y (ed.), Design & Design Management, Shanghai Jiao Tong University Press, Shanghai, PR China. Magazine Articles, 2007

'What Policies Matter to Design', in: SEE Bulletin, Research, June 2011, pp.2-7.

'Design Industries and Policies in the UK and China: a Comparison', in: Design Management Review, December 2010, pp.70-77.

The Conception of Branding in not-for-profit SMEs, in: 'The 8th International Conference for Marketing, Management, Finance, Consumer Behaviour, Tourism and Retailing Research for International Research in Consumers Location and their Environments (CIRCLE)', University of Zagreb & University of Dubrovnik, Dubrovnik, Croatia, 2011.

Engaging Employers in Delivering Design Programmes: A Comparative Study of Student Employability between China & UK, in: 'DesignEd Asia 2009', Hong Kong Polytechnic, Hong Kong, PR China. Conference details: DesignEd Asia Conference, Hong Kong, 2009.

Consumer Perception of Product Stimuli: an Investigation into Indian Consumer Psychology and its Implications for NPD Process and Strategy, in: 'D2B2 Tsinghua International Design Management Symposium 2009', Adelphi Research Institute for Creative Arts and Design, Beijing, China.

Consultants, Clients and Chinese Context: Managing Brands in China, in: 'D2B2 Tsinghua International Design Management Symposium 2009', Adelphi Research Institute for Creative Arts and Design, Beijing, China.

Managing the Design Business of the Future: Implications for the UK Design Industry, in: 'D2B2 Tsinghua International Design Management Symposium 2009', Adelphi, Salford, UK. Conference details: D2B2 Tsinghua International Design Management Symposium, Beijing, 2009.

The Development of a Model of Relations within the UK Design Industry, & its Implications for the Management of Design Businesses, in: '15th International Product Development Management Conference', European Institute for Advanced Studies in Management (EIASM), Hamburg, Germany. Conference details: 15th International Product Development Management Conference, 2008.

NPD in Chinese & UK Organisations: Managing Beyond Steady State, in: 'Association for Management of Technology (CAMOT) International Conference', CAMOT, Beijing, China, 2008.

New Consumers In China: The Means End Chain Approach to Market Segmentation & its Implications for Brand Positioning, in: 'D2B 1st International Design Management Symposium', Adelphi Research Institute for Creative Arts and Design, Shanghai, China, 2006.

Perception of Value & it's Implication for Product & Brand Development Strategy in China, in: 'International Conference on Innovation by Brand and Design Management: 2004 Design Brand management Conference & the 12th DMI Academic Forum', DMI, Seoul, Korea.

Consumer Preference in China: An Analysis of Value Perception within the Mobile Phone Sector, in: '11th International Product Development Management Conference', IPDM, Dublin, Ireland, 2004.

D2B2-Tsinghua International Design Management Symposium, Adelphi Research Institute for Creative Arts and Design, Salford, UK, 2009.

PhD, Strategic Marketing Planning in China: A Means-End chain Approach to Market Segmentation within the Beijing Mobile Phone Market, University of Salford, Salford, UK, 2006

UKIa4: Former MBA Design Management Course Leader; University of Westminster, UK

Department

Marketing and Business Strategy (MBS), Westminster Business School

Position:

Professor of Strategic Management

Education

PhD (Cranfield)

MBA (Cranfield)

BMUs (Birmingham)

Biography

After leaving university (with a degree in music), she worked in the probation service, latterly running a probation hostel for serious male offenders. Clearly a glutton for punishment, she left to do an MBA and then a PhD at Cranfield University. Since then she has worked for the University of Westminster, for nine years as Director of Research at Harrow Business School. She was appointed a Professor in 2002.

Teaching

She teaches strategic management and the management of innovation and change on programmes such as the MBA and the MA in Fashion Business Management. She is also in demand as a lecturer at international workshops, most recently in the USA, South Korea, Ireland, Iran and Norway.

Research

Her research interests lie mainly in the management of strategy within the creative industries such as music and design, the structuring of innovation and change, and the institutionalisation of corporate social responsibility, particularly in the fashion industry.

She has a number of PhD students, many of whom are based in the United States, focusing on topics such as strategic decision making in the recorded music industry, the designing of experiences in a major hotel chain, and role conflict in the UK's public sector auditing process.

Activities linked to professional practice

She is involved in the Knowledge Connect Scheme, working with companies on new product development and adoption. She has also been a key note speaker at a number of international design management conferences, in South Korea, Germany, and the Netherlands, as well as being a keynote speaker at the major Iranian strategic management conference in 2008.

Publications

■A Value Chain Analysis of the Organic Clothing Industry in India (with R Singh). 2010, Ecological Economics.

■Micro-sized design firms and design outcomes within a clustered environment (with J Gander). Creative Industries Journal, 2010.

■Patterns in the adoption of corporate social responsibility practices (with A Haberberg, J-I Martin-Castilla, J Gander, and C Helm). Under review, Journal of Global Responsibility.

■Outsourcing strategies in the international airline industry: an appraisal and theoretical critique (with Clive Helm). Journal of Air Transport Management, 14(5) 280-285. September, 2008.

■Managing Design in Global Environments (with J-B Kim), Guest Editors' introductory article, Design Management Journal, Special Issue: May / June 2008, 4-8.

■Managing alliances: the paradoxes of resource transfer, protection and contamination within the recorded music industry (with Jon Gander and Adrian Haberberg) Journal of Organizational Behavior 28, 607–624, June 2007.

■Hybrid Organizations as a Strategy for Supporting New Product Development (with Adrian Haberberg, and Jonathan Gander), Design Management Review Winter 2005 Vol. 16 Issue 1, pp 48-56

Books, book chapters and reports

■A value chain analysis of the organic cotton production industry: the case of UK retailers and Indian suppliers (with R Singh) in Mumbai, Amos and Ketola, Tarja (Eds.) 2009. Responsible Leadership: Proceedings of the Corporate Responsibility Research Conference. Proceedings of the University of Vaasa, Reports 157. Vaasa, Finland. ISBN 978 952 476 285 4, ISSN 1238 7118

■Institutionalizing idealism: patterns in the adoption of corporate social responsibility practice (with A Haberberg and J Gander) in Mumbai, Amos and Ketola, Tarja (Eds.) 2009. Responsible Leadership: Proceedings of the Corporate Responsibility Research Conference. Proceedings of the University of Vaasa, Reports 157. Vaasa, Finland. ISBN 978 952 47 285 4, ISSN 1238 7118

■The future of innovation: services and business models, in The Future of Innovation. John Wiley e-book, 2009, eds. Bettina von Stamm and Anna Trifilova.

■Hybrid Organizations as a Strategy for Supporting New Product Development (with A Haberberg and J Gander), book chapter in Corporate Creativity, Allworth Press (2009).

■How relevant is transaction cost economics to inter-firm relationships in the music industry? (with Jon Gander) in, Recent Developments in Cultural Economics, editor Ruth Towse. Part of a series The International Library of Critical Writings in Economics, Series Editor, Mark Blaug. Edward Elgar Publishing, August 2008, chapter 31.

■Strategic management: theory and application (with Adrian Haberberg), January 2008, Oxford University Press.

Conferences

■A value chain analysis of the organic cotton production industry: the case of UK retailers and Indian suppliers (with R Singh) in Mumbai, Amos and Ketola, Tarja (Eds.) 2009. Responsible Leadership: Proceedings of the Corporate Responsibility Research Conference. Proceedings of the University of Vaasa, Reports 157. Vaasa, Finland. ISBN 978 952 476 285 4, ISSN 1238 7118

■Institutionalizing idealism: patterns in the adoption of corporate social responsibility practice (with A Haberberg and J Gander) in Mumbai, Amos and Ketola, Tarja (Eds.) 2009. Responsible Leadership: Proceedings of the Corporate Responsibility Research Conference. Proceedings of the University of Vaasa, Reports 157. Vaasa, Finland. ISBN 978 952 47 285 4, ISSN 1238 7118

■The future of innovation: services and business models, in The Future of Innovation. John Wiley e-book , 2009, eds. Bettina von Stamm and Anna Trifilova.

■Hybrid Organizations as a Strategy for Supporting New Product Development (with A Haberberg and J Gander), book chapter in Corporate Creativity, Allworth Press (2009).

■How relevant is transaction cost economics to inter-firm relationships in the music industry? (with Jon Gander) in, Recent Developments in Cultural Economics, editor Ruth Towse. Part of a series The International Library of Critical Writings in Economics, Series Editor, Mark Blaug. Edward Elgar Publishing, August 2008, chapter 31.

■Strategic management: theory and application (with Adrian Haberberg), January 2008, Oxford University Press.

**UKIa5: MA Design Management Course Leader; Warwick University,
UK**

Current Position

Associate Professor (Senior Lecturer), Centre for Cultural Policy Studies, University of Warwick.

Qualifications

BA (hons) World Art and Museology: UEA;

MA, Aesthetics; PhD Art History and Theory (Essex)

Previous examination experience

	Internal	External
MRes		
MPhil		1
PhD	2	3

Employment History

- 1987-91: Multi-Media artist (painting, photography, video); Graphic and Exhibition Designer; Assist. Art Director; various companies and freelance (London).
- 1992-4: Chief Draughtsman, British School at Rome: San Vincenzo archaeological excavations (excavation season: June-September), Italy.
- January 1999-December 1999: Visiting Lecturer in the History of Art, Regent's College, Regent's Park, London.
- January 2000-September 2001: Henry Moore Post-Doctoral Fellow, Department of Art History & Theory, University of Essex [two year fellowship curtailed by offer of Warwick post].
- September 2001-2004: Lecturer in Modern and Contemporary Art, Department of History of Art, University of Warwick.

- July 2004 – July 2005 Development Director, Centre for Cultural Policy Studies, University of Warwick.
- July 2005 – 2006: Lecturer, Centre for Cultural Policy Studies, University of Warwick.
- August 2006—present, Associate Professor (Senior Lecturer), Centre for Cultural Policy Studies, University of Warwick.

Recent/Current Research

Coventry Phoenix Initiative Millennial regeneration (2001-4: research with Jochen Gerz, international artist): International conference; articles; public events.

The Aesthesis Project (2003-2009): International conferences at Krakow's Akademia Pedagogiczna, Poland (2006), The Banff Centre, Alberta (2008). Editor, designer and art director: *Aesthesis: International Journal of Art and Aesthetics in Management and Organisational Life*, vol 1. No. 1, Summer 2007; vol 1. No. 2, Autumn 2007; *Aesthesis*, vol 2. No. 1, Spring 2008; *Aesthesis*, vol 2. No 2, Summer 2008; *Aesthesis*, Vol. 3. No.1 (Spring 2009).

British School at Rome: (from 1991 – 2011) visual analysis of medieval artefacts (drawings in many publications, inc. Hodges, R., Leppard, S. and Mitchell, J. (2011)).

Art & Architecture Journal (2003-ongoing): Reviews Editor; contributor to www//aajpress.wordpress.com; Video interviews with artists.

Recent Research Publications and/ or conference papers

Currently working on a book: *Cities and Public Cultures*

Editor and chapter author (2010) *FLASH@Hebburn: Urban Art in the New Century*, London: Art & Architecture Journal. Chapter: 'Infrastructures', pp.44-60.

Editor and author (with Ian King: forthcoming May 2012) *Experiencing Organisations: new aesthetic perspectives*, Oxon: Libri publishing. Chapter: 'Aesthetics and the Spaces of Organisational Life'.

'Art, Public Authorship and the Possibility of Redemocratisation', *Visual Culture in Britain*, vol.12. no.2. (July, 2011).

‘Stretching the Boundaries: participation in visual arts’ [commissioned by ArtReach UK art consultancy] November 2011. Access at: <http://www.strangecargo.org.uk/>

‘Beyond the Creative City – Cultural Policy in an age of scarcity’ paper commissioned by MADE Centre for Placemaking Birmingham, November 2011 [published December 2011: www.made.org.uk].

‘Public Art and the Art of the Public – After the Creative City’, commissioned by IXIA Public Art Think Tank (published March 2012: www.publicartonline.org.uk)

‘Anti-Spaces and Ante Spaces in the Post-Creative City Urban Landscape’, commissioned by Eastside Projects for book *This is a Gallery and the Gallery is Many Things* (forthcoming, May 2012).

‘After the Creative City?’ for European Centre for Creative Economy’s www.LabKULTURE.tv: (forthcoming, 2012).

‘The Space of Narrative in Caro’s Trojan War’, *The Sculpture Journal* (forthcoming, June 2012).