The influence of Socioeconomic Status and Ethnicity on Speech and Language Development

Abstract

A number of factors influence the speech and language development of young children, and delay in the development of speech and language can have repercussions for school attainment and life chances. This paper is based on a survey of 3-4 year old children in the city of Stoke-on-Trent in the UK. It analyses the data collected from 255 children in 26 schools, and discusses the effects of socioeconomic status and ethnicity on delayed or advanced language development in young children. Language development in the project was measured using the New Reynell Developmental Language Scales (NRDLS) (Edwards, Letts and Sinka, 2011). The study shows mean standard scores for language Production and Comprehension within the low average range, thus demonstrating a challenge confronting nurseries/preschools in the area in preparing children for compulsory schooling. The research has implications for Early Years education policy and practice.

Keywords: Early Years education; Speech and language development; Ethnicity; Social class

Introduction

The Interactionist/Transactional theory of language development views the development of a child's language as a product of both nature and nurture; language is developed through the

interaction of a child's biological make-up and impact of the environment (Bohannon and Warren-Leubecker, 1989). The social or pragmatic function of language development is emphasised and it is argued that infants develop language through cyclical and reciprocal social interactions with their caregivers; infants influence their caregivers' behaviour through communicative behaviours such as crying, body gestures, and facial expressions, and in turn caregivers respond with verbal language which becomes more complex as a child begins to produce verbal language sounds. Thus, children learn more sophisticated and complicated language forms and social skills (Hulit and Howard, 2011).

While the majority of young children develop speech and language skills seamlessly, some are relatively slower in acquiring these skills. Consequently, their academic performance is poorer as compared with other children of that age when they start school, and may continue to be so throughout their schooling. Locke, Ginsborg and Peers (2002) highlight the possible consequences of delayed language development which may be manifested in reduced levels of literacy and academic achievement, and Law, Garrett and Nye (2010) argue that children whose speech and language difficulties persist may encounter long-term problems with socialisation and behaviour as well as literacy and school attainment. It is therefore critical that delays in language development are identified at an early age and children are supported accordingly so that lack of proficiency in speech and language does not impinge on their life chances. In a recent report, Law et al. (2013) maintain that language delay is usually distinguished from speech delay and other communication difficulties which can occur without affecting a child's language. However, in much of the literature on the subject, speech and language delay in children have been examined together, and will be discussed together in this paper.

A number of factors can affect the language development of young children, and those from disadvantaged backgrounds are particularly at risk of delayed speech and

language development. In a DFE report, Roulstone et al. (2011) contend that language development at the age of two predicts children's performance on entry to primary school. They also maintain that there is a strong association between children's social background and their readiness for school, and that the communication environment, in which children are brought up influences language development; with the communication environment, such as more books, toys and activities, and less television, as a more dominant predictor of early language development than social class. Children's success at school can therefore be predicted more credibly by their language at an early age and their communication environment, rather than by their social class.

Roulstone et al.'s argument is consistent with Siraj-Blatchford's (2010) findings which indicate that the quality of the home learning environment (HLE) is the most significant factor in predicting children's learning outcomes when other background factors are taken into account. In an extension of the Effective Provision of Preschool Education (EPPE 3-11) project, Siraj-Blatchford (2010) highlights seven types of home learning activities which are particularly significant, i.e. frequency of being read to; going to the library; playing with numbers; painting and drawing; being taught letters; being taught numbers; and being taught songs/poems/rhymes. She further notes that families make additional efforts in developing a productive learning environment when they feel their efforts will be rewarded.

Speech and language therapy services are available for children identified as exhibiting severe delay or disorder in speech and language development. However, not all children at risk are identified or referred to the Service. In their study of 138 monolingual English-speaking children, 63 (45.7%) boys and 75 (54.3%) girls, aged 5-12 years, from one of the most socially-disadvantaged neighbourhoods in Scotland, Law, McBean and Rush (2011) found that almost 40% of the children had delayed language development, with 10%

having severe difficulties. Though service use was high in the group, children who met the criteria for language impairment on discrepancy criteria were not the ones being referred to speech and language therapy. This indicates that children need to be assessed meticulously, so that those who require therapy for delayed or disordered speech and language development are referred to the appropriate services.

Espinosa and Lopez (2007, 50-52) highlight the need to assess and facilitate the language development of ethnic/cultural minority preschool children who are acquiring English as a second language. They maintain that assessors should understand the processes of acquiring a second language so that a child's language proficiency can be accurately interpreted. Furthermore, assessment information ought to be frequently collected and reviewed by all teachers in the setting to monitor changes in language and overall development, in order to adjust instructional activities accordingly.

This paper explores some of the factors that influence the rate of language development, and focuses on socioeconomic status (SES), ethnicity and first language. It discusses the methods used to gather data, the analysis of data, and offers conclusions.

Some factors affecting speech and language development

Socioeconomic status of the family

Poor language skills in children are believed to be a risk factor for low educational attainment (e.g. Snowling et al. 2001). Consistent evidence is found on SES and parenting, across cultures, of differences in child-directed speech between lower and higher SES mothers; higher SES mothers talk to their children more, and more frequently use speech to elicit

conversation, rather than using speech to direct behaviour. Furthermore, higher SES children have more advanced language skills in relation to lower SES children. For example, SES-related differences have been found in vocabulary size from the beginning of speech and increase with development (Hoff 2003).

In later research, Vasilyeva, Waterfall and Huttenlocher (2008) found no differences in children's use of simple sentences across groups of differently educated parents (high school diplomas, college degrees, professional degrees); and no difference in the age children start producing simple sentences, or in the proportion of simple sentences they use. However, children from better educated families start to produce complex sentences earlier and use them more frequently. The authors argue that differences in language development for children from differently educated backgrounds increase with age and the disparity continues beyond preschool. Letts et al. (2013) used two measures of SES: maternal education and IMD score - based on the *English Indices of Multiple Deprivation* (Communities and Local Government, 2010), for the location of the child's school or nursery. This is grounded in evidence that children in the lowest SES groups go to the school nearest where they live, showing a significant effect of maternal education on language comprehension and production. They used the *New Reynell Developmental Language* Scales; (NRDLS) (Edwards, Letts and Sinka, 2011), with children of mothers who had only completed statutory education and found these children as being more at risk of language delay. They also exhibited a significant effect of IMD score, with children attending a school/nursery in a low SES area showing more evidence of delay, but only in the area of Production.

Preschool attendance plays an important role in children's readiness for compulsory schooling as it can help to develop their speech and language more than if they had stayed at home. In their research in rural Ireland, McGettigan and Gray (2012) found that because of the scarcity of preschool places, most of the children could only attend preschool provision

on a sessional basis. This indicates that because of the area of residence, some children cannot benefit fully from preschool education that may be advantageous for their speech and language development. The authors recommend targeted funding to improve the provision, quality and practice in early years settings. Hoff (2006, 60) argues that 'the effects of SES on children's language environments and language development are robust and substantial'. She, nevertheless, concedes that, possibly, comparing language development across socioeconomic status is conceptually ill-founded, much like comparing the language development of children from different cultures, because lower SES children may be learning a different style of language use than those from high SES families. She, however, concludes that the weight of evidence suggests that language development differs as a function of SES, even accounting for the effects of language style.

Ethnicity and first language

The effects of ethnicity on language development are difficult to isolate because ethnicity covaries with SES and dialectical variability in language (Hoff, 2006). The literature on ethnicity and language learning is sparse, with African Americans being the most studied group, indicating that White parents provide more information about objects than African American parents, and middle class parents of both ethnicities provide more information than working class parents (Lawrence and Shipley, 1996). In relation to language development, the picture is complicated, illustrating that the early vocabulary and grammatical development of low income African American children is consistent with population norms, but by 30 months of age they fall behind (Roberts, Burchinal and Durham 1999).

Pungello et al. (2009) examined the relationships between language development and race, SES, maternal sensitivity, and maternal negative-intrusive behaviours in 18-36-month-old children. The study highlights the importance of sensitive parenting, but suggests that when examining race differences in language development, other demographic factors and variations in language input need to be investigated, using culturally and racially validated language development measures. Research on African American groups indicates that ethnicity affects children's language development; effects are indistinguishable from effects of SES; and there are group-specific influences related to stylistic features of language (Hoff, 2006).

An increasing multicultural society in the UK means that for some children, English is not the first language or the language spoken at home. At school such children are expected to understand and speak English, but home and school contexts may represent different cultures or subcultures and thus influence language development in different ways. There has been much controversy about how to help children who are not native speakers of English develop their English language skills and abilities in mainstream monolingual classrooms with the maximum efficiency (Levine and Munsch, 2011).

Methods

Quantitative, cross-sectional, data were collected from a selection of nursery and primary schools in the city of Stoke-on-Trent in the Midlands in England in the first term of the academic year 2013-2014. The aim of the study was to ascertain how well the speech and language of 3-4 year old children attending these schools was developing, and to examine the factors that influence language development in these children. Speech and language

development is an area of concern not just in this city, but in many other parts of the country, too. The main objective of the study was to examine the current situation in Stoke-on-Trent in order to improve policy and practice. It is expected that knowledge about children's language development in these schools will aid future planning of language programmes and help educators to improve standards of teaching in order to better support children at risk of language delay.

The study investigated development in language Comprehension and Production. The analyses sought evidence of delayed/advanced language development, and explored associations between language scores and gender, ethnicity, first language, birth order, and socioeconomic status. In this paper, we focus on speech and language development in relation to SES, ethnicity and first language.

Measurement of language development

Language development in the project was measured using the *New Reynell Developmental Language* Scales (NRDLS) (Edwards, Letts and Sinka, 2011). Measuring language development and competence is a complex task which requires knowledge of the target language and protocols for understanding language skills and abilities, for example, grammar, narrative, and emerging syntactic development. Language development is typically measured using age-appropriate standardised language tests, i.e. tests that have been standardised on a representative sample of students of the same age from the general population. The NRDLS is one such test, and was used by Speech and Language Therapists in Stoke-on-Trent for this study.

The NRDLS (Edwards, Letts and Sinka, 2011) provides two scales that assess language production and comprehension: the Comprehension Scale contains 72 items, divided between eight sections; and the Production Scale contains 64 items, divided between seven sections. Both scales cover early vocabulary, (nouns and verbs), relating two objects, simple sentences, grammatical inflections and complex sentences. Sections are equivalent across both scales and are administered using objects, toy animals and a picture book. The Comprehension Scale has additional sections on pronouns and differencing, whilst the Production Scale includes a section which tests grammatical judgement.

In recognition of the need for assessment tools for children from diverse cultural and linguistic backgrounds, the latest edition of NRDLS provides a Multilingual Toolkit which serves as a guide for practitioners working with children for whom English might not be the first/main language, and for those languages for which standardised norms are not available. The Toolkit allows practitioners to adapt assessment materials, illustrating how assessment can be informed for different linguistic and cultural contexts, provides examples of appropriate adaptations, and refers readers to relevant theory and literature regarding cross-linguistic language acquisition. Along with the inclusion of the Multilingual Toolkit in the fourth edition, the Comprehension Scale and the Production Scale in the latest edition 'have been more closely aligned for easier comparison of the two skill sets' (see http://reynell.gl-assessment.co.uk/why-use-the -scales/whats-new/). This particular innovation is noteworthy for prospective users, and a key selling point of the NRDLS, and makes the results of our research more compelling.

Measurement of socioeconomic status

In congruence with Letts et al. (2013), socioeconomic status (SES) was based on the rank score from the IMD. This is a composite measure of deprivation published by the Office for National Statistics (ONS) and is based on information on seven domains (income; employment; health; education; crime; access to services; and living environment). The IMD is based on the characteristics of the geographical area of residence by postcode, rather than those of the individual, as it allows for comparisons in deprivation between areas. IMD rank scores range from 1 to 32,482, with 1 being the most deprived.

Using the latest, 2010, version of the IMD, SES of the sample in the study was derived from postcode information for the school/nursery, and not for the individual child (consistent with Letts et al., 2013). IMD rank scores for the 26 schools/nurseries in the sample ranged from 396 to 18,994, with the majority of these falling to the lower end of the scale. Only three schools had rank scores above 8034, although it must be noted that these were only towards the middle of the scale. However, it is recognised that there is an assumption of homogeneity between attendees at a primary/nursery school and strong localisation. For the basis of analysis, rank scores were divided into three groups; these groups and the numbers of schools and children in each group can be seen in Table 1.

(TABLE 1 HERE)

Sample

According to the City Council statistics collected in 2011, there were 3,477 children aged 3 years in Stoke-on-Trent. A measure of language development was administered to 267 of these children aged between 3 years and one month to 4 years (3;01-4.00) by language therapists working in schools. The selection was based on the fact that the city has 13

'Collaborative' areas for education which are geographically based. Two schools per Collaborative were selected, and only those schools were chosen whose catchment area reflects their local population. Therefore, no Catholic primary schools were selected for the study as their intake includes children from a wider catchment area. There are 67 schools in the city which provide nursery education, and the sample includes over one-third of these schools.

The sample comprised 131 boys and 136 girls from 26 primary and nursery schools. However, data from 12 children were excluded from the analysis on the basis of missing data (11 children) or everything on the form being recorded as zero (1 child). Therefore, data from 255 children were included in the final sample. 18 schools/nurseries had 10 children; one had 18 children; the others had between three and nine children. The characteristics of the sample by age are given in Table 2.

(TABLE 2 HERE)

The definitions of ethnicity and first language variables are given in Table 3. As per ONS statistical standards on ethnicity, the ethnic codes used are based on the City Council LA categories. We acknowledge that 'skin colour is an option for considering ethnic group. However, it's not an adequate criterion in its own right and for some its use is seen as unacceptable' (Potter-Collins, 2011, 7).

(TABLE 3 HERE)

Ethics

Although ethical considerations permeate all aspects of research, it is even more important to abide by ethical practice when the research involves children or young people (Basit, 2013). Osler (2010) contends that while we do not need to develop different ethical criteria when engaging with children and young people simply because of their age, it is vital to consider issues of power and ethics, since dominant conceptions of childhood may influence researchers' decisions when applying ethical principles to children and young people. Mortari and Harcourt (2012) note some ethical dilemmas facing researchers when they wish to involve children in participatory research. They examine the role of ethics with regard to protection, justice and care, and point to the hidden dilemmas that researchers confront in such research.

The *Convention on the Rights of the Child* (UNICEF, 2014) provides a common, global, ethical and legal framework to develop an agenda for children. It advocates establishing children's rights as enduring ethical principles throughout the world. Furthermore, educational researchers follow the ethical guidelines of their professional organisations and research councils. In the present study, we conformed to the ethical procedures stipulated by the British Educational Research Association (BERA) and the Economic and Social Research Council (ESRC). As researchers, we also adhered to our individual moral code of conduct, which dictates that no harm or hurt is caused to research participants, data are kept confidential and anonymous, and research findings are not falsified.

The parents of all the children who were chosen to participate in the study were asked if they would consent to their child's inclusion in the study. Only one parent declined, and their child was excluded from the research. The children's consent was obtained subtly. At the beginning of data collection, the researchers asked the children if they would like to come and look at some toys with them, and only those children were tested who willingly joined

the researcher. One or two shy children at some schools who seemed interested, but were hesitant, were accompanied by a key worker, who was either a teacher or a teaching assistant. Throughout data collection, the children were closely observed to detect signs of distress, and the testing was ceased immediately if a child appeared to be uncomfortable. This happened on only one occasion; the child was taken out of the room by a key worker; and testing continued with the rest of the group. All raw data which include details of the children and schools follow data protection guidance, and data are stored securely in locked cabinets. The children's names and dates of birth have been removed from the data analysis and no child is identifiable in any reports or papers discussing the study.

Analyses procedure

Our final sample size was 255 and the data were analysed statistically using SPSS, as follows:

1. Standard scores were examined for evidence of delayed or advanced language development.

2. Analysis of covariance (ANCOVA) was used to compare children grouped according to ethnicity, first language, and SES of school/nursery (the independent variables). ANCOVA allows us to determine whether mean differences in the dependent variable (language development) between groups differ significantly from one another.

3. Initial analyses centred on one-way ANCOVAs with standard score as the dependent variable, and age as the covariate. Covariate is a continuous control variable which is observed, but not manipulated, although it can affect the outcome of a study. Given that age is specifically known to influence language development (Herschensohn,

2012), holding it as a covariate removes possible confusion between age and other variables of interest from the analyses.

4. As the independent variables contained more than two levels, where results were significant, post-hoc tests were run using Bonferroni adjustments to compensate for multiple comparisons, in order to determine where differences occurred.

5. Effect sizes were interpreted using Cohen (1988).

6. Analyses were undertaken for both Comprehension and Production.

Results

Standard scores

Mean standard scores on Comprehension and Production were 87.12 (SD = 14.00) and 86.15 (SD = 14.51) respectively. A paired samples t-test indicated that there was no significant difference between Comprehension and Production scores, $t(254) = 1.70$, $p = .090$ (two-tailed), eta squared = .018 (small effect). The correlation between scores was high (.801).

Standardised scores were examined for language delay. On a standardised scale with an average of 100, children with scores from -1 to -1.5 SDs (standard deviations) below the mean are considered to have 'moderate delay'; those from -1.5 to -2 SDs below the mean are believed to have 'moderate to severe delay'; and those below -2 SDs are thought to have 'severe delay' (Edwards, Letts and Sinka, 2011). These descriptive categories and associated standard scores and percentile ranks are shown in Table 4. Standard scores between -1 and +1 SDs are considered 'average'. This range of standard scores has been divided into three

categories following the recommendations of Flanagan and Caltabiano (2004) for classifying standard scores.

(TABLE 4 HERE)

As can be seen from Table 4, mean standard scores for both Comprehension and Production are within the 'low average' range. The distribution of mean standard scores for both scales is illustrated in Figure 1, in relation to the other descriptive categories, a high proportion of children are in the 'average' range for both Comprehension and Production (31.4% and 32.5% respectively). However, the scores are skewed towards the 'delayed' end of the scale with 44.1% and 53.3% of children having some degree of delay for Comprehension and Production respectively. Only around 4% of children are classified as advanced on both measures.

(FIGURE 1 HERE)

Following Edwards, Letts and Sinka (2011), the percentages of students exhibiting some evidence of delay were compared to the percentages expected to fall within these ranges for a normal distribution (see Table 5). For both Comprehension and Production, for all categories the proportions of children evidencing delay were much higher than would be expected, with the highest difference being for the 'moderate delay' category (11.8% and 16.1% for Comprehension and Production respectively). Differences between actual and expected percentages go down with more evidence of delay.

(TABLE 5 HERE)

Socioeconomic status

One-way ANCOVAs were conducted to compare children grouped according to socioeconomic status of school/nursery. SES groupings were Very Low SES; Low SES; Middle Range SES.

Comprehension: The covariate, age, was not significantly related to SES, $F(1,251) = 0.73$, p = .394 (partial eta squared = .003, very small effect). There was a significant effect of SES, $F(2, 251) = 4.04$, p = .019 (partial eta squared = .031; small effect). Post-hoc analysis (Bonferroni adjustment) revealed a significant difference between Very Low SES (adjusted mean = 86.64) and Middle Range SES (adjusted mean = 95.11). The mean difference was 8.46 (p = .029, *d* = .590, medium effect) which indicates that children attending a low SES school or nursery may be more at risk of delay in Comprehension skills, with the mean for this group being in the 'low average' range compared to 'average' for children attending mid-range SES schools/nurseries. There was also a difference between Low SES (adjusted mean = 85.87) and Middle Range SES; the mean difference was 9.2 (p = .017, *d* = .643, medium to large effect); with children from low SES schools/nurseries being more at risk of delay (falling into the 'low average' group).

Production: The covariate, age, was not significantly related to SES, $F(1,251) = 0.10$, p = .748 (partial eta squared < .001, very small or no effect). There was also no significant effect of SES, $F(2, 251) = 2.28$, p = .104 (partial eta squared = .018; small effect).

Figure 2 shows the mean standard scores for Comprehension and Production, adjusted to take into account child's age, for each SES group. As can be seen, the pattern of mean scores is different for the two measures.

(FIGURE 2 HERE)

Ethnicity

One-way ANCOVAs were conducted to compare children grouped according to ethnicity: White British; Asian/Asian British; Other Ethnic Background. Preliminary assumption testing for ANCOVA was conducted to check for normality, linearity, homogeneity of regression slopes and homogeneity of variances. There were no violations of linearity or homogeneity of regression slopes. Scores on the dependent variable (standard scores for Comprehension and Production) were not normally distributed, but as the sample size was large (30+) there was no need to transform the variables (Pallant, 2007). There was violation of homogeneity of variance for the first language variable. Following the recommendations of Tabachnick and Fidell (2007), a more conservative alpha level of $p = .025$ was used to interpret the analyses that used this variable (instead of the conventional alpha level of $p = .05$). Reliable measurement of the covariate (age) was assumed.

Comprehension: The covariate, age, was not significantly related to ethnicity, $F(1,251) = 0.95$, $p = .330$ (partial eta squared = .004, very small effect). There was a significant effect of ethnicity, $F(2, 251) = 11.14$, $p < .001$ (partial eta squared = .082; medium effect). Post-hoc analysis (Bonferroni adjustment) revealed that the significant difference was between White British (adjusted mean = 89.57) and Asian/Asian British (adjusted mean = 78.81) ethnicity groups. The mean difference was 10.76 ($p < .001$, $d = .757$, large effect) and indicates that Asian/Asian British ethnicity groups are more at risk of delay in Comprehension performance; the mean for this group is in the 'moderate delay' range compared to 'low average' for White British.

Production: The covariate, age, was not significantly related to ethnicity, $F(1,251) = 0.02$, p = .877 (partial eta squared < .001, very little or no effect). There was a significant effect of ethnicity, $F(2, 251) = 7.26$, $p < .001$ (partial eta squared = .055; medium effect). Post-hoc analysis (Bonferroni adjustment) revealed that the significant difference was between White British (adjusted mean = 88.16) and Asian/Asian British (adjusted mean = 79.42) ethnicity groups. The mean difference was 8.74 (p = .001, d = .616, medium to large effect) and indicates that Asian/Asian British ethnicity groups are more at risk of delay in Production with the mean for this group being within the 'moderate delay' range compared to 'low average' for White British.

Figure 3 shows the mean standard scores for Comprehension and Production, adjusted to take into account child's age, for each ethnicity group.

(FIGURE 3 HERE)

First language

One-way ANCOVAs were conducted to compare children grouped according to the first language spoken, as it is closely linked with ethnicity. First language groupings were English; Asian languages; Other languages.

Comprehension: The covariate, age, was not significantly related to first language, $F(1,251)$ = 0.78, p = .379 (partial eta squared = .003, very small effect). There was a significant effect of first language, $F(2, 251) = 15.75$, $p < .001$ (partial eta squared = .111; large effect). Post-hoc analysis (Bonferroni adjustment) revealed a significant difference between English and Asian languages (adjusted means = 89.22 and 78.62 respectively). The mean difference was

10.60 (p < .001, *d* = .771, large effect) and indicates that children who have an Asian language as their first language are more at risk of delay in Comprehension skills with the mean for this group being in the 'moderate delay' range compared to 'low average' for English speakers. There was also a difference between English and Other Languages (adjusted mean = 70.74). The mean difference was 18.48 (p < .001, *d* = 1.345, very large effect); with Other Language speakers falling into the 'moderate to severe delay' group.

Production: The covariate, age, was not significantly related to first language, $F(1,251) = 0.06$, p = .813 (partial eta squared = .001, no effect). There was a significant effect of first language, $F(2, 251) = 11.50$, p < .001 (partial eta squared = .084; medium effect). Post-hoc analysis (Bonferroni adjustment) revealed a significant difference between English and Asian languages (adjusted means = 87.91 and 79.50 respectively). The mean difference was 8.41 (p = .005, *d* = .602, medium to large effect) and indicates that children who have an Asian language as their first language are more at risk of delay in Production with the mean for this group being in the 'moderate delay' range compared to 'low average' for English speakers. There was also a difference between English and Other languages (adjusted mean = 70.64). The mean difference was 17.27 (p = .001, *d* = 1.237, very large effect); with Other Language speakers again falling into the 'moderate to severe delay' group.

Figure 4 shows the mean standard scores for Comprehension and Production, adjusted to take into account child's age, for each first language group. As can be seen, the pattern of scores for both measures is virtually identical.

(FIGURE 4 HERE)

Discussion and Conclusion

The current study shows that there is a considerable problem faced by nurseries and preschools in Stoke-on-Trent in preparing 3-4 year old children for compulsory schooling. The mean standard scores for both Comprehension and Production are within the 'low average' range. In relation to the other descriptive categories for standard scores, a high proportion of children are in the 'average' range. However, overall for both scales, the scores are skewed towards the 'delayed' end of the scale with almost half the children showing some delay. Only a very small proportion of children demonstrate advanced Comprehension and Production. The proportion of children showing evidence of delay is higher than would be expected for a normal distribution, i.e. higher than would be anticipated in the general population.

The findings indicate that children attending a school/nursery in a low SES area might be more at risk of delay in Comprehension skills. Two differences are evidenced: (1) those between very low SES and mid-range SES schools/nurseries; and (2) those between low SES and mid-range schools/nurseries. Very low SES and low SES schools/nurseries fall into the 'low average' category compared with 'average' for the mid-range SES group. The magnitude of the effect is medium for (1) and medium to large for (2), illustrating the possible importance of SES in relation to Comprehension development. There are no effects for Production, which might suggest that SES is not related to language Production. It is, however, not possible to be clear on whether there is a peer effect in relation to SES because the SES measure is not based on individual level postcode data. Hence, the data can only suggest a link between language performance and SES, and additional research is needed to examine this further. Also, the findings related to SES for Comprehension and Production must be considered with caution as the mid-range SES group contains only a very small

number of schools/nurseries as compared with the very low SES and low SES groups (three, as opposed to 12 and 11 respectively).

For both Comprehension and Production, Asian/Asian British ethnic groups are more at risk of delayed language development, showing 'moderate delay' as compared with 'low average' development for White British children. The magnitude of the effect for both of these scales is large and demonstrates that these findings are not trivial. The findings also indicate that children who have an Asian language as their first language are more at risk of delay in Comprehension and Production with the mean for this group being in the 'moderate delay' range compared to 'low average' for English speakers in both categories. Once again, the extent of the effect is large, which gives the impression that these findings are not trivial. Even more importantly, children whose first language is not an Asian language, or English, but is another language, appear to have a greater deficit in relation to native English speakers; on both scales, they fall into the 'moderate to severe delay' group compared to 'low average' for native English speakers.

Given that people of a specific ethnic group typically speak the language associated with that group, the possibility of a relationship between first language and ethnicity was examined. No interaction effects were found for Production and Comprehension, which indicates that the effect on first language does not depend on being in a specific ethnic group, (i.e. the effect on first language would remain if all children were of the same ethnic group). Further, the effect on ethnicity does not depend on having a specific first language, (i.e. the effect on ethnicity would remain if all children spoke the same first language).

The Interactionist or Transactional theory regards language development as a consequence of both nature and nurture (Bohannon and Warren-Leubecker, 1989); and the DFE study by Roulstone et al. (2011), and Siraj-Blatchford's (2010) EPPE 3-11 project, stress the association between children's early nurturing and their readiness for primary

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school. As is evident from the current study, children from disadvantaged backgrounds are not always able to develop at the expected rate with regard to speech and language. Such children need radical measures in the form of robust policies and practices at nursery/preschool level to enable them to develop their speech and language.

The sample size in this research study is small and the findings cannot be widely generalised. Nevertheless, in the specific context, the Education Department in Stoke-on-Trent City Council needs to consider its spending priorities and allocate resources to prevent delayed speech and language development in young children. Concerted educational interventions must be introduced to improve the speech and language development of 3-4 year old children in this region. In addition to traditional reading activities to encourage young children to read, the interventions should include games, story-telling, group work, and outdoor activities to enhance the children's speech and language (see for example, Smogorzewska, 2014). These should involve the parents and older siblings as well as the children and teachers. Programmes can be developed in nurseries to enhance the confidence of Early Years practitioners and improve their practice (see for example, Jopling, Whitmarsh and Hadfield, 2013). Considering the high number of minority ethnic children in the city's nurseries/preschools, the Multilingual Toolkit provided by the latest edition of the NRDLS can be a useful resource to aid assessment of children who do not have English as a first language. It was not possible to ascertain to what extent this toolkit was used with the sample; something that was beyond the parameters of this study and could be considered for future research.

Over a decade ago, Locke, Ginsborg and Peers (2002) raised concerns about the preschool education of disadvantaged children. They maintained that little was being done for the professional development of nursery staff to work with children with delayed language development. The government's Green Paper, *Every Child Matters* (DFE, 2003) pointed to

the need for action to increase the number of speech and language training. More recently, as a result of the Bercow Review (Bercow, 2008), the UK government has allocated resources to meet the needs of children and young people with speech, language and communication difficulties. Faulkner and Coates (2013) argue that there is cogent evidence that investment in state maintained early years education is extremely cost effective, though they point to a paradigm shift in funding allocation from state to private and voluntary sectors, which may or may not be helpful for preschool children.

Lindsay et al. (2010) note a lack of collaborative practice between local authorities (LAs) and Primary Care Trusts (PCTs), i.e. education and healthcare services, and recommend greater collaboration between all LAs and PCTs, achieved through a major Government initiative, in order to generate a systemic change in this area. Since 2004, Stoke-on-Trent has benefited from a city-wide policy to tackling speech, language and communication deficits through a multiagency approach, called 'Stoke Speaks Out'. The current study highlights the significance of continuing and extending such LA-PCT collaboration even further.

The City Council can also follow the suggestions on assessment made by Espinosa and Lopez (2007, 50-52), noted above. Classroom assessment activities should reflect curriculum goals and gain information on the skills, abilities and languages that children demonstrate in their natural home settings. Minority ethnic teachers can be employed, though schools will need to find a balance between drawing on their significant knowledge of minority ethnic children's culture/languages/home practices, and positioning them as experts responsible for all aspects of the education of minority ethnic children (Basit and Santoro, 2011). Universal population-based approaches to service delivery are required (Law, McBean and Rush, 2011). Research should be built into the design of interventions to inform government policy, rather than added on as an afterthought after an intervention has started,

as often happens in government policy (Law et al., 2013). Stoke-on-Trent City Council needs to invest in research to evaluate and improve current practice in Early Years education.

Almost 25 years ago, at the Convention on the Rights of the Child in 1989, countries around the globe made a promise to children to do everything possible to protect them and to promote their rights to thrive, learn and reach their full potential. A great deal has been achieved since then, but so much more still needs to be done. The UNICEF has declared 2014 as the 'Year of Innovation for Equity' to attract the world's attention in order to develop strategies for children's wellbeing (UNICEF, 2014), by convening a series of 'Activate talks' to help the most vulnerable and marginalised children. It is hoped that supporting young children to develop their speech and language in order to improve their life chances will be one of the key aims of these talks.

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