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LANGUAGE AS A CHILD WELLBEING INDICATOR

SEPTEMBER 2017

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Overview

Early language acquisition impacts on all aspects of young children's non-physical development. It contributes to their ability to manage emotions and communicate feelings, to establish and maintain relationships, to think symbolically, and to learn to read and write. While the majority of young children acquire language effortlessly, a significant minority do not.

The UK prevalence rate for early language difficulties is between 5% and 8% of all children, and over 20% for those growing up in low-income households. The high prevalence among disadvantaged children is thought to contribute to the achievement gap that exists by the time children enter school and continues until they leave. It is well known that language difficulties predict problems in literacy and reading comprehension, but less well known that they may be indicative of problems in children's behaviour and mental health as well. For example, oral language difficulties are typically present in the educational profiles of young offenders.

We believe the fundamental link between language and other social, emotional and learning outcomes makes early language development a primary indicator of child wellbeing.

Structure of this report

We make this case first by providing an overview of the prevalence and impact of early language difficulties and the way it is currently supported by UK policy (chapter 1). This is followed by a more in-depth description of typical language development and how language difficulties emerge (chapter 2). We then consider the factors commonly associated with language difficulties, notably literacy, socioemotional problems and mental health (chapter 3), before examining more specifically the ways in which social disadvantage impacts upon young children's language and communication development. We conclude with recommendations for how the early language agenda can be taken forward.

1. The impact of early language difficulties and policy responses

This chapter provides an overview of what we know about the prevalence of language difficulties and different policy responses.

KEY POINTS

- Studies suggest that 5–8% of all children in England and Wales are likely to have language difficulties.
- Children from socially disadvantaged families are more than twice as likely to be diagnosed with a language problem.
- Disparities in child language capabilities are recognisable in the second year of life and are clearly having an impact by the time children enter school.
- Language skills play a key role in children's school attainment and employment opportunities.
- A number of charitable organisations have highlighted the impact of early language skills on children's later literacy and school achievement.
- Policy-makers are also interested in language development from the perspective of children's longer-term life chances and social mobility.
- Well-supported arguments exist for prioritising early language development as a primary child wellbeing indicator.

What do we mean by child language?

Language development is the process by which children come to use words, gestures and vocalisations to communicate with others and gain knowledge. Narrowly defined, language development pertains to the learning of linguistic rules that govern a child's mastery of the sounds, meaning, order and use of words. More broadly, language development refers to the child's increasing understanding of the social dynamics of language – that is, the ways in which meaning is created and understood within various social contexts.

Difficulties in language development arise for a variety of complex reasons, including delays in a child's ability to understand and use vocabulary, grammatical rules and meaning embedded in narrative discourse.[1] These difficulties can occur in both the production and comprehension of language, and often vary dramatically in how they manifest themselves in individual children. These complexities have resulted in a wide variety of methodologies and terms being used to diagnose language difficulties, and have contributed to inconsistencies in practice and assessment.

1 Language and Reading Research Consortium (2015). The dimensionality of language ability in young children. *Child Development,* 86 (6), pp. 1948-65.

The prevalence of language difficulties

It is thought that around 5–8% of children may have a speech and/or language impairment,[2] of which a significant proportion will have a primary developmental speech and/or language disorder. Prevalence estimates for boys are higher than for girls, at 8% and 6% respectively. In the UK, approximately 85,000–90,000 children between the ages of 2 and 6 are referred to speech and language therapists each year,[3] and 18–31% of children aged 19–21 months living in disadvantaged communities have been found to have language delay that warrants referral for specialist assessment.[4]

The most recent prevalence estimates come from a screening of more than 7,000 children aged 4–5, conducted in Surrey, England. This screening estimates the prevalence of language disorders at just under 10%, with language disorders of unknown origin comprising just under 8% and language disorders associated with intellectual disability and/or an existing medical diagnosis at just over 2%.[5]

The prevalence of language impairment is thought to vary across the social spectrum. Unfortunately, the nature and scale of many population studies mean that many children have not received comprehensive evaluation by speech and language therapists or psychologists. This means that the majority of prevalence estimates come from large-scale population studies involving children's performance on standardised measures, reporting the proportion of children with language scores below the normal range (ie one standard deviation (SD) below the mean for the population concerned). Our knowledge of the standardised distribution of these tests indicates that 17% of children score below this threshold across the population as a whole. Table 1.1 compares the proportion of children scoring below this threshold (and who therefore have language delay) in three ongoing longitudinal cohort studies, across five quintiles of deprivation.

TABLE 1.1

PREVALENCE OF LANGUAGE DELAY (%) AT FIVE YEARS, BY LEVEL OF SOCIOECONOMIC DISADVANTAGE

	Quintile 1 (most disadv'd)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (least disadv'd)
Millennium Cohort study	18	10	7	5	3
Growing up in Scotland	23	18	15	11	10
Early Language in Victoria Study	21	16	7	12	6

Note: Language delay is based on standardised language scores 1 standard deviation below the mean.

2 Boyle J., Gillham B., and Smith N. (1996). Screening for early language delay in the 18-36-month age-range: the predictive validity of tests of production and implications for practice. *Child Language Teaching and Therapy*, 12 (2), pp. 113-27; Tomblin J. B., Smith E, and Zhang X. (1997). Epidemiology of specific language impairment: pre- and perinatal factors. *Journal of Communication Disorders*, 30 (4), pp. 325-44.

3 Broomfield, J., and Dodd, B. (2004). Children with speech and language disability: caseload characteristics. *International Journal of Language and Communication Disorders*, 39 (3), pp. 303-24.

4 Pickstone, C. (2003). A pilot study of paraprofessional screening of child language in community settings. *Child Language Teaching and Therapy*, 19 (1), pp. 49-65.

5 Norbury, C. F., Gooch, D., Wray, C., Baird, G., Charman, T., Simonoff, E., Vamvakas, G., and Pickles, A. (2016). The impact of nonverbal ability on prevalence and clinical presentation of language disorder: evidence from a population study. *Journal of Child Psychology and Psychiatry*, 57 (11), pp. 1247-57. doi:10.1111/jcpp.12573.

We can see that in the UK Millennium Cohort Study (MCS), 18% of children in the most disadvantaged quintile have language scores more than one standard deviation below the mean, while the equivalent figures for the other two cohorts are 23% and 21% respectively. We note that, with one anomaly (quintile 4 in the Victoria study), the predicted pattern of reducing prevalence as disadvantage reduces holds across all the studies.

One would therefore expect the prevalence rate to increase as the level of social disadvantage increases. And indeed this is exactly what we find from two other UK studies which have examined the language levels of young children from the most socially disadvantaged groups. In the first study, Locke and colleagues reported that 50% of 4-year-old children in nursery in very disadvantaged areas of Sheffield who were in the lowest IMD quintile had poor language skills. This figure dropped to 30% by the age of 5 year.[6] In the second, Law and colleagues reported similarly high figures for a population in a school in Edinburgh.[7]

Understanding the role disadvantage plays in combination with other factors is important in order to understand differences in the developmental trajectories of children raised in lower- and higher-income homes. In this respect, Hart and Risley's '30 million word gap' study observed that American toddlers growing up in low-income households heard approximately 600 words per hour, while those from professional families heard more than 2,100 words per hour. Over time, this resulted in higher-income children hearing over 30 million words more than their lower-income peers by the age of 3 (see figure 4.1). Hart and Risley hypothesised that this early language gap likely contributed to income-related differences that were apparent in the primary school achievement of the same children five years later.

Hart and Risley's observations have since been replicated in multiple UK studies, which have also found a strong and persistent gap in the school achievement of lower- and higher-income children. However, these studies suggest that family income is likely to be only part of the story. For example, a recent Save the Children study involving Millennium Cohort data observed that while social disadvantage predicted children's academic performance, 'the most important factor in reaching the expected levels in English and maths at seven [years of age] was children's language skills at age five. This was greater than the link to poverty or poor parental education.'[8]

This finding highlights the fact that early language difficulties are good early predictors of later problems as children develop. Indeed, a separate cohort study following over 11,000 children born in Britain in 1970 through to adulthood found that those with poor vocabulary skills at age 5 were four times more likely to have reading difficulties in adulthood, three times as likely to have mental health problems, and twice as likely to be unemployed when they reached adulthood,[9] when controlling for other factors.

6 Locke A., Ginsborg J., and Peers I. (2002). Development and disadvantage: implications for the early years and beyond. *International Journal of Language and Communication Disorders*, 37 (1), pp. 3-15.

7 Law, J., McBean, K., and Rush, R. (2011) Communication skills in a population of primary school aged children raised in an area of pronounced social disadvantage. *International Journal of Language and Communication Disorders*, 46, pp. 657–64.

8 Finnegan, J., Telfer C., and Warren H. (2015). *Ready to Read: Closing the gap in early language skills so that every child in Scotland can read well*. Save the Children. http://www.savethechildren.org.uk/resources/online-library/ready-read-scotland

9 Law, J., Rush, R., Parsons, S., and Schoon, I. (2009). Modelling developmental language difficulties from school entry into adulthood: Literacy, mental health and employment outcomes. *Journal of Speech, Language and Hearing Research* 52, pp. 1401-16

Without doubt, the long-term negative impacts of language difficulties suggest that their associated societal costs are likely to be high. Although few studies have directly considered the question of cost, an economic evaluation conducted by Matrix observed that every £1 invested in enhanced speech and language therapy (SLT) with children with specific language impairment (SLI) could potentially generate £6.43 through increased lifetime earnings.[10]

Policy responses to child language difficulties

Policy responses to child language difficulties have taken a variety of forms.[11] Within the UK, a number of charities and lobbying organisations have a long history of promoting children's language development (see appendix 1). Charities such as I CAN, Afasic and the Communication Trust have traditionally maintained a focus on speech and language practice, while other organisations, such as Save the Children and the Centre for Social Justice, have more broadly considered child language from the perspective of social inequalities.

A number of government reviews have directly addressed the needs of children with speech and language difficulties. The most significant of these has been the Bercow review of services for children with speech, language and communication needs, which reported in July 2008.[12] This review was commissioned by the Department for Education to chart the quality and availability of support for children with identified language problems.[13] A primary conclusion of the review was that the ability to communicate is fundamental to all of a child's social, emotional and cognitive development. The Bercow review also observed that there was an inadequate understanding of the importance of children's language development among practitioners, commissioners, and policy-makers, and made recommendations about how this understanding could be improved. The government's response to Bercow's recommendations resulted in a number of activities, some of which are still operative today. These activities include the establishment of the Communication Trust, the appointment of a Communication Champion for England and Wales, and the commissioning of the Better Communication Research Programme (BCRP).[14]

The Department for Education has also had a longstanding interest in supporting the needs of children with an identified language problem, as well as a more recent interest in the relationship between early language development and social inequalities. For example, in a 2016 review of the two-year nursery placement offer, former Ofsted chief inspector Sir Michael Wilshaw expressed concern that the speech and language needs of children living in disadvantaged communities

10 Marsh, K., Bertranou, E., Suominem, H., and Venkatachalem, M. (2010). *An Economic Evaluation of Speech and Language Therapy*. Matrix Evidence. http://www.naylornetwork.com/bse-nwl/pdf/Economic_Evaluation_of_Speech_and_Language_Therapy%5B1%5D.pdf

11 Shonkoff J., P. (2007). *Science, Policy, and the Young Developing Child: Closing the gap between what we know and what we do*. Ounce of Prevention Fund.

12 Bercow Review (2008). *The Bercow Report: A review of services for children and young people (0-19) with speech, language and communication needs*. Department for Children, Schools and Families. https://www.education.gov.uk/publications/eOrderingDownload/Bercow-Report.pdf

13 Lindsay G., Desforges M., Dockrell J., Law J., Peacey N., Beecham J. (2008). The effective and efficient use of resources in services for children and young people with speech, language and communication needs. Monograph. Department for Children, Schools and Families.

14 Dockrell, J., Lindsay, G., Roulstone, S. and Law, J. (2014). Supporting children with speech language and communication needs: an overview of the results of the Better Communication Research Programme, *International Journal of Language and Communication Disorders* DOI/10.1111/1460-6984.12089; Bercow Review (2008).

were still not being met, and noted that these children had the most to gain if their needs were addressed before school entry.[15]

Wilshaw's conclusions are consistent with observations made in a variety of other policy reports, including findings from a 2012 Sutton Trust study, which observed a 19-month language gap between lower- and higher-income children at school entry,[16] as well as two reports from the Centre for Social Justice, which observed a strong link between child poverty and Early Years Foundation Stage Profile scores.[17] Wilshaw's comments also resonate with findings reported last year by Centre Forum, which observed a strong association between children's language skills at age 5 and school achievement at age 11. Specifically, less than half of all children who had *not* reached the expected language levels at the age of 5 went on to achieve the national benchmark scores in reading, writing and mathematics at age 11.[18]

Policy-makers are now also formally recognising the relationship between children's language development, adult employment and social mobility. For example, the importance of speech, language and communication needs was highlighted in several recent parliamentary debates and questions, including the Children and Social Work Bill (15 June 2016, second reading), the Education and Adoption Bill (10 November 2015, amendment 18) and a discussion on early years and school readiness in the Education for All Bill (12 July 2016).[19]

Language as a child wellbeing indicator

Over the past 10 years, evidence concerning the strong link between early language development and later-life outcomes has resulted in several calls to prioritise early language skills as a primary child wellbeing indicator. This recommendation was first made in 2008 by the Equality and Human Rights Commission[20] and then again by Frank Field MP in his 2010 independent review of child poverty and life chances.[21] Most recently, Save the Children's Scottish report *Thrive at Five*[22] identified the need for a population-level measure of 'developmental health' at school entry that would make use of a variety of wellbeing indicators, including those addressing children's language skills.

Given the current government's interest in social mobility, we believe these recommendations should be refreshed, endorsed and prioritised. The universal monitoring of children's language skills which already takes place should be enhanced to provide benchmarking data that would allow the government to

15 Wilshaw, M. (2016) *Unknown children – destined for disadvantage?* Office for Standards in Education.

16 Sutton Trust (2012). 'Social mobility and education gaps in the four major Anglophone countries: research findings for the social mobility summit'. Presentation, May 2012. www.suttontrust.com/wp-content/uploads/2012/05/social-mobility-summit2012.pdf

17 Centre for Social Justice (2013). *Requires Improvement: The causes of educational failure*. Centre for Social Justice. http://www.centreforsocialjustice.org.uk/library/requires-improvement-causes-educational-failure; Centre for Social Justice (2014). *Closing the Divide: Tackling educational inequality in England*. Centre for Social Justice. http://www.centreforsocialjustice.org.uk/library/closing-divide-tackling-educational-inequality-england

18 Centre Forum (2016). *Education in England: Annual report 2016*'. Centre Forum. www.centreforum.org/publications/education-in-england-annual-report-2016

19 HM Government (2016). The Queen's Speech 2016. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/524040/Queen_s_Speech_2016_background_notes_.pdf

20 Johnson, P., and Kossykh, Y. (2008). *Early years, life chances and equality: a literature review*. Equality and Human Rights Commission. http://cdn.basw.co.uk/upload/basw_25807-5.pdf

21 Field, F. (2010). *The Foundation Years: preventing poor children becoming poor adults - The report of the Independent Review on Poverty and Life Chances*. HM Government.

22 Save the Children (2012) *Thrive at five: Comparative child development at school-entry*. Save the Children. http://www.savethechildren.org.uk/resources/online-library/thrive-five-comparative-child-development-school-entry-age

assess national progress in this area over time. We also believe that making child language a wellbeing indicator would increase its relevance for those involved in the delivery of early-years services. This would, in turn, likely increase the quality of support these children receive and subsequently improve their school achievement over time.

Ultimately, we believe that an emphasis on child language would lead to improved entry into the workforce and reduced government expenditure on employment-related benefits. On the other hand, without this additional focus, there is a risk that children with language difficulties will continue to struggle through school and into adulthood, and that intergenerational cycles of poverty will be perpetuated.

2. Early language development

This chapter describes typical and atypical language development during the early years.

KEY POINTS

- Almost all children learn how to communicate through language, although there are strong and persistent differences in their ability to do so.
- Language development is the result of multiple complex processes involving expression and comprehension.
- Typically, children first master vocabulary and grammar and then learn the pragmatic use of language (the implicit rules that govern how meaning is derived within social contexts).
- Language difficulties are caused by a variety of biological, genetic and environmental factors.
- In young children, language problems typically present themselves as delays in their ability to produce and understand language.
- It is not uncommon for children to outgrow initial language delays, although it is difficult to predict when and how this will occur.
- A variety of systems exist to measure differences in children's language development and diagnose language problems.
- Assessment at a single point in children's development is likely to be insufficient to understand and predict language problems.
- Ongoing monitoring throughout the early years is likely to provide the most accurate estimates of language problems at the population level.
- Ongoing monitoring can also ensure that children receive the appropriate services when language difficulties are identified.

Typical language development

From sounds to words

Language is the vehicle by which children communicate their needs and ideas, develop and maintain relationships, and solidify their understanding of essential concepts.[23]

In order to understand how children learn language, it is useful to distinguish it from the ability to communicate more generally. Communication begins at birth, through innate behaviours such as crying and cooing, which form the basis of the infant's interactions with others. Language, by contrast, is a complex symbolic system that children master through their cognitive capabilities, which become increasingly more sophisticated as they mature. Most children are able to say a few words by their first birthday and communicate in simple sentences by their second. These verbal skills, in turn, facilitate children's cognitive development, by refining their understanding of key concepts and their ability to think in the abstract.

23 Law, J., Charlton, J., Dockrell, J., Gascoigne, M., McKean, C., and Theakston, A. (2017) *Early Language Development: Needs, provision and intervention for preschool children from socio-economically disadvantage backgrounds*. Education Endowment Foundation.

The acquisition of language is supported by children's daily interactions with their parents and other family members. As soon as babies can babble, adults begin to 'pull' language out of them through infant directed speech (IDS). Scientists believe that this gentle but exaggerated 'baby talk' reinforces four important skills: (1) it helps the baby to better differentiate the sounds of words; (2) it associates words with emotional expressions; (3) it helps to direct the infant's attention to the meaning of specific words, and (4) it encourages the use of language for communication. Infant directed speech is not necessary for children to learn language, but a growing body of evidence suggests that it facilitates language learning in the early phases of development.[24]

Although the majority of children learn to speak over the first few years of life, it is clear that the rate at which they do so varies considerably.[25] There are a number of reasons for this. In some cases children are naturally quicker to respond to language. In other cases it may be associated with the input that they receive from adults around them. Although the amount of vocabulary the child has is likely to be associated with their later use of vocabulary, some children are quicker to start using words and have larger vocabularies, while others will have better developed grammatical abilities and will better comprehend what adults around them are saying.[26]

However, it is important to stress that for most children, language learning is a relatively straightforward process. The majority of children receive sufficient stimulation from their environment to understand and say what they need to say.

Expression and comprehension

Language development is commonly understood through its constituent parts. One of the first distinctions is between what children understand and what they say, often described in the research and practice literature as comprehension/receptive language and production/expressive language.

Expression includes non-verbal behaviours (gesturing, turn-taking, body language and so on) and the use of words and sentences to express thoughts and ideas. It also refers to the way children learn to modify words to change their meaning, known as morphology (for instance, by adding endings to verbs to change their tense, or adding 's' to create a plural noun).

Expression most obviously involves children's use of speech. This includes a child's ability to articulate words clearly and understand the sound rules for a specific language. Speech is sometimes seen as the most important aspect of communication because it is so obvious to the listener, but it is only one element of communication, which also incorporates tone, gesture and facial expression.

For the majority of childen, language learning follows the same patterns. Although many language skills are acquired by the time the child reaches school, they continue to develop over the subsequent years. As vocabulary increases, so does the child's ability to convey their ideas clearly. Alongside the more obvious aspects of speech and language, children also develop 'pragmatic' skills. These skills are not specifically language-based, but play a critical role in the way that the child interacts with others. Central to this is the child's capacity to interpret what the person speaking to them means.

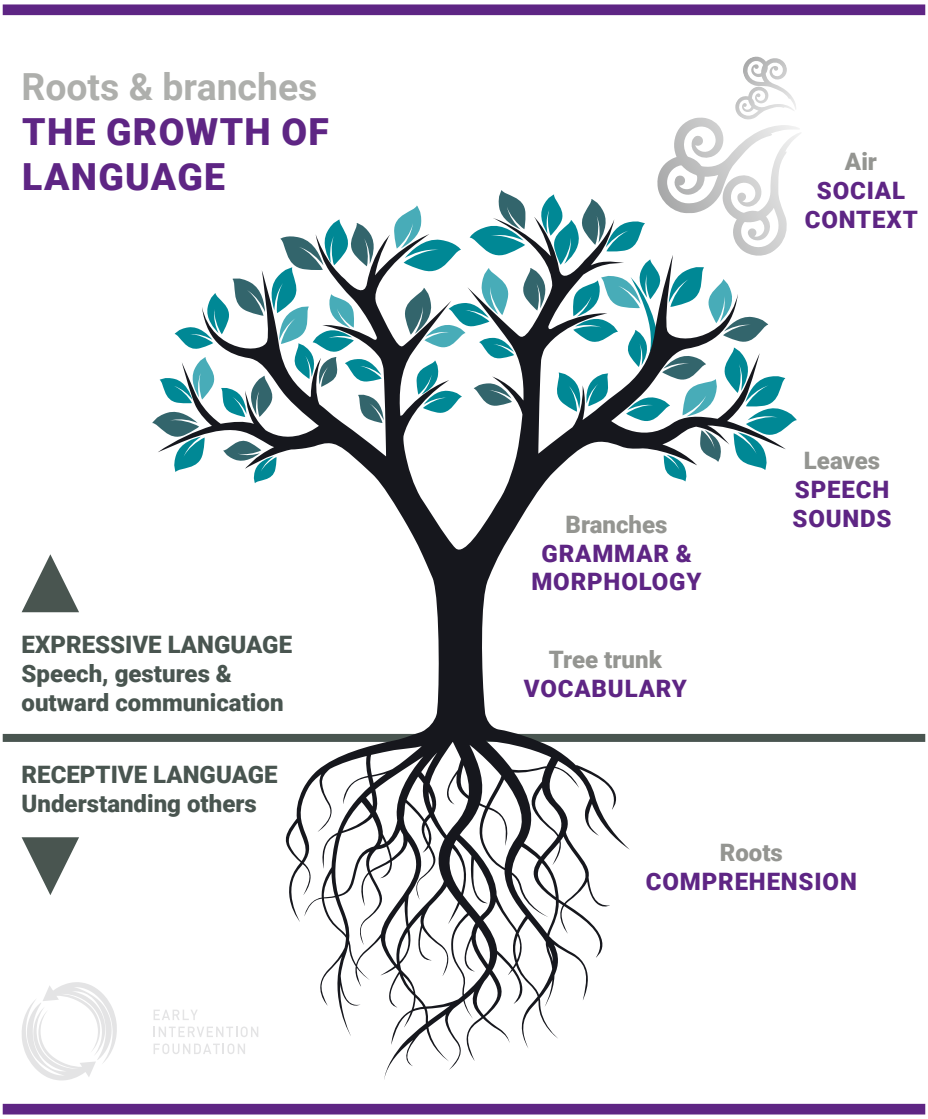
24 Ma, W., Golinkoff, R. M., Houston, D., and Hirsh-Pasek, A. (2011). Word Learning in Infant- and Adult-Directed Speech, *Language Learning and Development*, 7, pp. 209–25.

25 Bates, E., Bretheron, I., and Snyder, L. (1988). *From first words to grammar: Individual differences and dissociable mechanisms*. Cambridge University Press.

26 Bretherton, I., McNew, S., Snyder, L., and Bates, E. (1983). Individual differences at 20 months: Analytic and holistic strategies in language acquisition. Journal of Child Language. 2, pp. 293-320.

The analogy of a tree is helpful to see how these elements interrelate (see figure 2.1).

FIGURE 2.1
THE ELEMENTS OF LANGUAGE



Comprehension, or receptive language, is the root, underpinning all expressive language. When children understand what others are saying, they are more likely to be able to use those expressions themselves.[27] Understanding, however, can be difficult to assess. For example, if a father says to his 3-year-old, leaving the house, 'put on your hat, coat and gloves, we're going to the shops', does the child have to understand each of these words? It depends on the context, but it is quite likely that this routine is familiar to the child, and they may be watching their father doing the same things, and copying him without fully understanding the request.

Lastly, the social context is the surrounding air, affecting how all aspects of a child's communication and language development function. Children's lives are commonly full of routines which allow them to anticipate meaning in this way. Most children

27 Bloom, L. (1974). Talking, understanding, and thinking: Developmental relationship between receptive and expressive language, in Schiefelbusch R. L. (ed) *Language Perspectives, Acquisition, Retardation and Intervention*, University Park Press. http://dx.doi.org/10.7916/D88S4VMC

gain these skills gradually over the first few years, although it is not uncommon for children in preschool classrooms to watch their peers to find out what the teacher has said. Of course, the same goes for social communication. It is essential for the child to understand what the parent and other adults mean. It is not enough to just hear the words.[28]

When children are at home, parents and others are able to support language learning at their child's own individual pace. This changes, however, once children enter school, when the pace of learning increases and teachers must support the needs of multiple children. Children must therefore meet a minimal threshold of expression and comprehension in order to be successful in the classroom.

School also requires that children understand the context in which language is communicated. For example, we know that when the teacher says 'brrrr, it's cold in here, the window is open' they probably mean 'could you go and close it please?' But the child must *infer* that this is what is intended. An understanding of context is also necessary for children to master the figurative use of language, such as in jokes and idioms. Without this, common expressions such as 'raining cats and dogs' would be taken literally – and very incorrectly. Figurative language is also fundamental to a child's interactions with their peers, where slang expressions are often used to express ideas that are far removed from any literal interpretation.

Atypical language development

The fact that almost all children learn to talk without explicit instruction suggests that language acquisition is a fairly resilient developmental process. However, there are marked individual differences in children's ability to use language, which are determined by a variety of environmental and heritable factors. In some instances, these differences represent natural variations in human development, but in others may suggest the existence of a more enduring problem.

When children are very young, it is often difficult to determine the reasons underpinning language difficulites. During the early years, language problems are most often apparent when there are delays in a child's ability to meet early language milestones. Hence, the term 'language delay' has traditionally been used to describe language problems identified at an early point in children's development, typically before the age of 5. As children grow older, however, language problems become more differentiated: some have difficulties as part of a broader profile of underachievement in other areas of their development, while others seem to have marked differences in their development relative to their peers for no apparent reason. It is easier to classify language problems into specific disorders when children are older, and thus the term 'developmental language disorder' is more appropriate when describing more specific language problems observed in older children.

Initial language delays may be present in children's expressive and/or receptive use of language. Expressive language delays are relatively easy to identify through delays in a young child's ability to use words. In many cases, these 'late talkers' appear to understand what others are saying (for instance, they can follow directions), but they may have difficulty using words to communicate their own ideas. Receptive language problems, on the other hand, are only apparent when it is very clear that the child cannot follow directions or organise the information

28 Snow, C. E., Perlmann, R., and Nathan., D. (1987). Why routines are different: Toward a multiple-factors model of the relation between input and language acquisition, in Nelson K.E., and Van Kleeck, A. (eds) *Children's language*. Lawrence Erlbaum Associates.

they hear. As a result, receptive language problems are usually not identified until the child is at least 3 years old.

A variety of biological, genetic and environmental factors contribute to early language delays. These factors include processing issues (such as hearing loss), learning issues (autism or cognitive delays) and environmental issues (restricted parent–child input, limited home learning environments or reduced opportunities for the child). All of these factors determine thequality and amount of linguistic information that children receive as they are growing up.[29]

Bilingualism is an example of an environmental factor that may affect the rate at which language is learned, and which may make it more difficult to make a clear diagnosis of language development problems. It is not unusual for children raised in bilingual or multilingual homes to learn each of their languages at a slower rate than monolingual children. However, their development will typically be within the range of typical development, and they will soon catch up, often by the age of 3.[30] It is also worth noting that bi- or multilingualism is the norm in most societies, so differences in language performance observed with measures developed in monolingual cultures may, in fact, be largely artificial.

It is important to note that it can be difficult to determine how various environmental and heritable factors contribute to early language problems in bilingual children. This is because the end result of these varying factors is inevitably the same: a general delay in a child's ability to use language. Biological and genetic factors, for example, contribute to language delays in a proportion of bilingual children at a rate that is similar to what is observed in the general population. However, the 'delays' typically observed among bilingual children may obscure the identification of language problems rooted in other heritable or environmental factors.

The measurement of child language

The nature of early language difficulties creates challenges in the identification and treatment of language disorders. The diagnosis of early language problems is further complicated by the fact that many children seemingly outgrow their language difficulties, although questions may remain about the degree to which early delays have been resolved in any individual case.[31] These complexities have led to differences in how language difficulties are described and assessed.[32] We summarise these differences briefly here, as they have a bearing on how we should describe and measure early language as an indicator of children's wellbeing.

29 Phillips, D. A., and Shonkoff, J. P. (eds) (2000). *From neurons to neighborhoods: The science of early childhood development.* National Academies Press.

30 Slobin, D. I. (ed) (1985). *The cross-linguistic study of language acquisition*, vols 1 and 2. Lawrence Erlbaum Associates.

31 Reilly, S., Bavin, E. L., Bretherton, L., Conway, L., Eadie, P., Cini, E., Prior, M., Obioha, C. U., and Wake, M. (2009). The Early Language in Victoria Study ELVS: A prospective, longitudinal study of communication skills and expressive vocabulary development at 8, 12 and 24 months. *International Journal of Speech-Language Pathology,* 11 (5), pp. 344-57; Law, J., Rush, R., Anandan, C., Cox, M., and Wood, R. (2012). Predicting language change between 3 and 5 Years and its implications for early identification. *Pediatrics,* 130, pp. 132-7; Dale, P. S., McMillan, A. J., Hayiou-Thomas, M. E., and Plomin, R. (2014). Illusory recovery: Are recovered children with early language delay at continuing elevated risk? *American Journal of Speech-Language Pathology,* 23, 437-47; McKean, C., Mensah, F. K., Eadie, P., Bavin, E. L., Bretherton, L., Cini, E., and Reilly, S. (2015). Levers for language growth: Characteristics and predictors of language trajectories between 4 and 7 years. PLoS ONE, 10 (8).

32 McKean, C. Reilly, S. Law, J., and Morgan, A. (2016). Childhood Language impairment, in Rueschemeyer, S., and Gaskell, G. (eds) *Oxford Handbook of Psycholinguistics*. Oxford University Press. Submitted.

Terminology

Despite the heterogeneous nature of language difficulties, labels are important, and thus the history of child language impairment has been framed by a wide variety of diagnostic terms since it was first described nearly two centuries ago. While some terms have been used for only short periods of time, others have had more traction.[33] In the 1970s, for example, terms such as 'deviant language',[34] 'language disorder',[35] 'delayed language',[36] and 'developmental language disorder'[37] were commonly used to describe children with various language difficulties. By the 1980s, these had been replaced by labels like 'specific language deficit' and 'specific language impairment' (SLI), to clarify that impairments were specific to linguistic processes and not explained by other physical or cognitive impairments (such as hearing loss or autism).[38] More recently, the use of the word 'specific' has been debated on the grounds that its meaning remains ambiguous and provides limited clinical utility.[39] The term 'language delay' is also widely used to describe children with less complex language difficulties, although recent consensus work on the topic has determined it to be unhelpful once children enter school.[40]

As we have noted previously, language difficulties can occur alongside other physical and cognitive problems, or may occur on their own, in a way that has been described as 'unexplained'. In such circumstances, language difficulties are described as a 'primary condition'; when delays are associated with other conditions, they are referred to as a 'secondary condition'. Hence, language difficulties in children with a hearing loss or a learning disability are often described as a secondary condition, and the term 'delay' is used only when these children are very young. It should also be noted that the term 'language delay' is not typically used to describe the English language skills of children whose first language is not English.

The terminology used in educational settings is typically less specific and 'clinical' than the classification systems described above, but is nevertheless recognisable to early educators in their everyday observations of children. Within the UK, 'speech, language and communication needs' (SLCN) is the term most commonly used to describe children who have needs that warrant additional educational

33 Bishop D. V. M. (2014). Ten questions about terminology for children with unexplained language problems. *International Journal or Language and Communication Disorders*, 49 (4), pp. 381-415; Reilly, S. Tomblin, B., Law, J. McKean, C., Mensah, F. Morgan, A., Goldfeld, S., Nicholson, J. and Wake, M. (2014). Specific Language Impairment: a convenient label for whom? *International Journal of Language and Communication Disorders* 49, pp. 416-51; Bishop, D. V. M., Snowling, M. J., Thompson, P., Greenhalgh, T. and the Catalise consortium (2016a). Catalise: a multinational and multidisciplinary Delphi consensus study. Identifying Language impairments in Children. *PLOS One*; Bishop, D. V. M., Snowling, M. J., Thompson, P., Greenhalgh, T. and the Catalise consortium (2016b). Catalise: a multinational and multidisciplinary Delphi consensus study. Phase 2: Terminology for problem with language development (in press).

34 Leonard L. (1972). What is deviant language. *Journal of Speech and Hearing Disorders*, 37, pp. 427-46.

35 Rees N. (1973). Auditory processing factors in language disorders: the view from Procrustes's bed. *Journal and Speech and Hearing Disorders*, 38, pp. 304–15.

36 Weiner P. (1974). A language delayed child at adolescence. *Journal of Speech and Hearing Disorders*, 39, pp. 202-12.

37 Aram, D., and Nation, J. (1975). Patterns of language behavior in children with developmental language disorders. *Journal of Speech Hearing Research*, 18, pp. 229-41.

38 Stark, R. E., and Tallal, P. (1981). Selection of children with specific language deficits. *Journal of Speech and Hearing Disorders,* 46, pp. 114-22; Leonard L. (1981). Facilitating linguistic skills in children with specific language impairment. *Applied Psycholinguistics*, 2 (2), pp. 89-118; Fey, M., and Leonard, L. (1983). Pragmatic skills of children with specific language impairment, in Gallagher, T., and Prutting, C. (eds) *Pragmatic Assessment and Intervention Issues in Language*. College-Hill Press.

39 Bishop (2014).

40 Bishop et al (2016a).

support. Children with the highest level of need are often described as having 'developmental language disorder',[41] meaning that their language scores fall significantly below what one would expect for a child's age.[42]

The current SEND (special educational needs and disability) code of practice groups difficulties into broad categories. These include 'communication and interaction', which SLCN falls under, but also 'cognition and learning'. However, considering the close relationship between language and literacy (discussed in chapter 3), the educational description of 'communication and interaction needs' is too narrow to include reading or writing difficulties that may be the result of language problems. Rather, it focuses more on pragmatic aspects of communication involved in children's interactions with others. Similarly, the category of 'cognition and learning' does not describe the impact of SLCN on cognition and learning. SLCN and literacy, however, are referred to under *both* categories in the previous code of practice, from 2001.[43]

Assessment

A wide range of tools exist for assessing children's language development. These include comprehensive psychological assessments, which incorporate aspects of child language in their battery of measures, as well as short-form screening instruments that are intended to identify initial language problems.[44] Many of these assessment and screening tools are 'norm referenced', meaning that they have been standardised against a population average as a point of comparison for an individual child's score. However, relatively few have been standardised in British populations, meaning that their accuracy within the UK may be limited.

Screening processes

Screening processes exist primarily to identify children whose language skills are below what would be expected for their age. They are not, however, appropriate for diagnosing specific language disorders or determining treatment over time. Screening may take place through direct processes that make use of a specific instrument, such as the Clinical Evaluation of Language Fundamentals (CELF),[45] or indirect processes that include parental reports or observations made by a teacher or family GP. The Ages and Stages Questionnaire (third edition, ASQ-3) is an example of an indirect screening tool, as it is completed by a health visitor through conversations with a parent.

41 Bishop, D. V. M. (1992) The Underlying Nature of Specific Language Impairment. *Journal of Child Psychology and Psychiatry*, 33, pp. 3–66.

42 Stothard, S. E., Snowling, M. J., Bishop, D. V. M., Chipchase, B. B., and Kaplan, C. A. (1998). Language-impaired preschoolers: A follow-up into adolescence. *Journal of Speech, Language, and Hearing Research,* 41, pp. 407-18; Tomblin, B. (2008). Validating diagnostic standards for specific language impairment using adolescent outcomes, in Norbury, C. F., Tomblin, B., and Bishop D. V. M. (eds.) *Understanding developmental language disorders: from theory to practice*. Psychology Press; Law, J., Tomblin, J. B., and Zhang, X. (2008). Characterizing the growth trajectories of language-impaired children between 7 and 11 years of age. *Journal of Speech, Language, and Hearing Research,* 51(3), pp. 739-49; Johnson, C. J., Beitchman, J. H., and Brownlie, E. B. (2010). Twenty-year follow-up of children with and without speech-language impairments: Family, educational, occupational, and quality of life outcomes. *American Journal of Speech-Language Pathology,* 9, pp. 51-65; Conti-Ramsden, G., St Clair, M. C., Pickles, A., and Durkin, K. (2012). Developmental trajectories of verbal and nonverbals skills in inividuals with a history of specific language impairment: from childhood to adolescence. *Journal of Speech Language and Hearing Research*, 55, pp. 1716-35.

43 Department for Education (2001). *Special Educational Needs Code of Practice*. DfES/581/2001 [Online]. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/273877/special_educational_needs_code_of_practice.pdf

44 Dockrell, J. E., and Marshall, C. (2015). Measurement Issues: Assessing language skills in young children. *Child and Adolescent Mental Health*, 20, pp. 116-25.

45 Semel, E. S., Wiig, E. H., and Secord, W. A. (2004). *Clinical evaluation of language fundamentals-preschool*. Psychological Corporation.

Indirect processes are advantageous in that they provide a practical means of identifying children with potential problems and referring them on to additional services. However, they are reliant on the judgment of the parent or practitioner, which is likely to be subjective and prone to inaccuracies. Understanding the prevalence of language difficulties and benchmarking progress requires population-level information, and direct screening measures have the potential to provide this kind of information in a way that is consistent and trackable over time. However, direct screening processes come with their own practical and psychometric drawbacks that restrict their use. Practical issues include factors affecting administration, such as who will administer the test and analyse the data. Psychometric issues include those pertaining to their precision and accuracy.

Accuracy is most often understood in terms of a measure's sensitivity and specificity. Sensitivity describes the extent to which a screening tool can reliably identify children *with* a diagnosable language problem. Specificity determines the extent to which a tool reliably identifies children *without* a language problem. Greater sensitivity increases the likelihood that children with language problems will be identified. However, it also increases the rate of 'false positives', meaning that some children without language problems will be referred for treatment. This has practical implications for how services respond to language problems identified through screening.

It is worth noting that the majority of screening instruments lack the sensitivity and specificity to accurately identify child language problems at the individual level. Although several measures have recently shown promise in the United States, none have yet been standardised with children living in the UK. In addition, screening assessments that take place at a single point in time are often not adequate for predicting language problems as children develop.

For these reasons, some have recommended that universal screening processes assess child language at multiple points in children's early development. In England and Scotland, health visitors use the ASQ-3 to screen for children whose language skills are developing relatively slowly at approximately 30 months.[46] In England, children's language capabilities are currently screened again at age 4–5 through the Early Years Foundation Stage Profile (EYFSP) assessment.

Assessment tools

Assessment processes exist primarily to determine the nature and extent of language difficulties so that appropriate treatments can be made available and progress monitored over time. Some are quite specific in their consideration of only one or two aspects of language (such as vocabulary or grammar), whereas others are more comprehensive, taking into account other aspects of children's cognitive and psychological functioning. In this respect, the diagnostic capabilities of assessment tools are often much better than screening instruments. However, they often require more time and expertise to administer and interpret.

Assessment processes differ depending on their purpose and the child's capabilities. Language assessments, including those developed to measure children's IQ, frequently involve a series of graded questions, which increase in complexity as children mature. Many of these assessments are designed to be completed by children, but some are designed to be completed by the parent, especially when the child is very young. For example, the MacArthur-

46 Field (2010).

Bates Communicative Development Inventory (CDI) asks parents to assess their child's vocabulary against a standardised list of increasingly complex words. Once children enter school, teacher-completed assessments are more commonly used. The Early Years Foundation Stage Profile is an example of a teacher-completed assessment that provides validated judgments about individual children's language capabilities at reception level.

A variety of practitioners (such as educational psychologists and speech and language therapists) are also trained to use classification systems that provide a comprehensive understanding of a child's language needs. Examples of these include the Diagnostics and Statistical Manual (fifth edition, DSM-V)[47] and the International Classification of Diseases (10th edition, ICD-10).[48] DSM-V is the handbook used in the diagnosis of mental disorders in the United States and much of the rest of the world, providing descriptions and guidance on symptoms and other criteria for diagnosis. ICD-10 is the official coding system used across many countries for diagnosis of physical and mental health disorders, particularly within the UK and Europe. The two systems are considered to be 'companion publications', whereby DSM-V provides the most up-to-date diagnostic guidelines alongside ICD-10 codes, which permits the monitoring of diagnosis statistics.

Separately, within the UK education system, a set of terms have been developed to differentiate children with special educational needs (SEN). These educational labels include children whose difficulties may not reach the criteria for diagnosis of a disorder but are nevertheless significant barriers to learning. Each of these systems differs in their classifications and diagnostic guidelines. Table 2.1 outlines the key differences between these systems.[49]

The recent multinational and multidisciplinary Delphi consensus study 'Criteria and Terminology Applied to Language Impairments: Synthesising the Evidence' (Catalise) recommended that the term 'developmental language disorder' be used to described children with the most severe language difficulties, rather than 'specific language impairment' or other current terms. Interventions should be offered to children whose language difficulties are likely to persist and/or who experience 'functional limitations', such as poor educational attainment or limited everyday communication, social relationships or quality of life as they move into the school years.[50] However, as yet, no methods exist to reliably identify these children.

47 American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders*. 5th edition.

48 World Health Organization. (1992). *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. World Health Organization.

49 Department for Education (2001).

50 Bishop, D. V. M., Snowling, M., Thompson, P. A., Greenhalgh, P., and Catalise-2 consortium. (2016c). Catalise: a multinational and multidisciplinary Delphi consensus study of problems with language development. Phase 2. Terminology. *PeerJ Preprints* (4), e2484v2481; Bishop et al (2016a); Ebels, S. (2014). *International consensus on diagnosis for children with problems with language development*. NAPLIC. http://www.naplic.org.uk/category/developmental-language-disorder

TABLE 2.1

COMPARING THE DSM-V, ICD-10 AND UK EDUCATION SYSTEM CLASSIFICATIONS

	DSM-V	ICD-10	UK education system
Production	Single professional organisation: American Psychiatric Association	Global body: World Health Organisation	Government: DfE, SEND Code of Practice
Classification	Communication disorders: language disorder; speech-sound disorder; childhood-onset fluency disorder; social-pragmatic communication disorder; unspecified communication disorder	Receptive difficulties; expressive difficulties; specific speech articulation disorders	Communication and interaction: Speech, language and communication needs
Diagnostic criteria/ description of difficulties	List of symptoms under each category. Functional impairment in daily life. Difficulties not attributable to sensory, neurological or psychical impairment or condition. Substantial difference between language abilities and non-verbal performance. Difficulties must not meet the diagnostic criteria for other disorders (eg autism).	Statistical indication. No neurological, sensory or physical impairments that directly affect the use of language.	Difficulty communicating with others. Difficulty saying what they want to, understanding what is being said to them or they do not understand or use social rules of communication. May have difficulty with one, some or all of the different aspects of speech, language or social communication at different times. SLCN can also be a feature of a number of other areas of SEN or disorders such as autism spectrum disorder (ASD).

Implications for policy and practice

This chapter has considered the nature of children's early language development and the various ways in which it is measured. It is clear that while early language learning is a natural and resilient developmental process, there is also a fair degree of individual variation in the rate at which language is learned. Moreover, individual variation may or may not be predictive of later problems as children grow older. More detail on this issue is available elsewhere.[51] This presents challenges in interpreting the significance of early language difficulties and also in determining how best to intervene.

The identification of language problems is further complicated by a lack of consistent terminology to describe language difficulties and by limitations in the precision of the screening and assessment tools that are currently available.[52] To compound this problem, there is a lack of specialist, focused training on language and communication for professionals working with children during preschool years, such as health visitors, childminders and nursery workers.

51 Law et al (2017).

52 Dockrell, J. E. (2001). Assessing language skills in preschool children. *Child Psychology and Psychiatry Review*, 6, pp. 74-85.

Taken together, these issues result in:

- difficulties in establishing the kind of reliable and country-specific population averages which would enable measures to be norm-referenced
- difficulties in conducting assessments that are sufficiently comprehensive for understanding the varied nature of many early language problems
- difficulties in differentiating short-lived difficulties from more enduring problems.

These limitations do not, however, suggest that language assessment in the early years is a futile process. Rather, they argue for the use of standard methods that monitor young children's language development over time, training to support their implementation, and ongoing monitoring.[53]

However, ongoing monitoring systems come with their own set of challenges and a set of conditions must be in place in order for them to be feasible. These include:

- agreement on what the appropriate monitoring and screening processes might be
- agreement on when (at what age) monitoring should ideally take place, and how monitoring activities might be informed by proportionate universalistic principles
- the availability of practitioners within a variety of settings (including childcare, preschool and health visiting) with sufficient skills and support to administer assessments and interpret their findings
- agreement on the terminology that should be used across settings and workforces
- shared data management systems that efficiently gather and process information to track individual children's progress over time and to provide useful population-level data.

Further work is required if we are to establish a system that is 'fit for purpose' to monitor young children's language development. Recommendations for how these issues might be addressed are discussed in greater detail at the end of this report.

53 Dockrell and Marshall (2015).

3. Early language difficulties and other child outcomes

The ability to use language underpins all of children's social interactions and many intellectual activities. It is therefore not surprising that language and communication difficulties are commonly associated with other problems in early childhood. This chapter considers the impact of children's language on their ability to read and write, their behaviour and mental wellbeing.

KEY POINTS

- Speech, language and communication difficulties account for approximately 21% of all special educational needs within England's primary education system.
- Children with language difficulties fall behind their typically developing peers in academic achievement at every stage of education, from the Early Years Foundation Stage right through to GCSE level and above.
- The long-term impact of poor literacy and academic achievement means these children are at greater risk of mental health difficulties, offending, and entering the criminal justice system.
- 50% of the UK prison population are reported to have literacy difficulties, compared with 17% of the general population.
- Over 74% of young people in a youth offenders institute have below-average communication skills, and over 60% have speech, language and communication needs.

Child language and literacy

Language and phonological skills are the foundations of literacy development and subsequent academic achievement.[54] The association between child language difficulties and poor literacy is universally acknowledged. Almost all children with speech, language, and communication needs (SLCN) experience some difficulty with learning to read and write.[55] Although specific difficulties vary between children, literacy problems include difficulty with decoding print, reading comprehension, phonic skills, spelling or writing. For example, the Bercow report (2008) found that children whose attainment fell below the nationally expected level in reading at the end of key stage one typically had delays in the development of communication, language and literacy.[56]

Educational practitioners also report language problems as having a greater impact on literacy than speech problems (bearing in mind the differences between speech and language identified in chapter 2), with language difficulties having the most notable impact on reading comprehension, but also on writing, reading,

54 Snowling, M., and Hulme, C. (2012). 'Interventions for children's language and literacy difficulties', *International Journal of Language and* Communication *Disorders*, 47 (1), pp. 27-34.

55 The Communication Trust. Phonics advice for teachers – Supporting literacy development for children with speech, language and communication needs (SLCN). https://www.thecommunicationtrust.org.uk/media/18979/phonics_factbox_on_developing_literacy_for_children_with_slcn.pdf

56 Bercow Review (2008).

decoding and spelling.[57] It is generally assumed that the association between reading disorders and language impairments may be attributable to the difficulties children have in their ability to understand language, which diminishes reading comprehension, and their phonological awareness, which reduces their ability to decode words.[58] This is supported by studies that observe a greater prevalence of achievement disorders among children with a language impairment, although prevalence rates vary widely (from 25% to 90%) depending on the study.[59]

Language and literacy difficulties also have profound impacts on children's educational achievement and attainment over time. Gaps in achievement between pupils with and without special educational needs, where speech, language and communication needs are highly prevalent, are evident from the Early Years Foundation Stage to attainment at post-16 years. In a sample of children aged 4–6 years with language disorder, 88% did not make expected academic progress in the Early Years Foundation Stage.[60] A recent report commissioned by the Communication Trust, *Talking about a generation*,[61] concluded that:

> 'When we look at primary school attainment and specifically at children with identified SLCN in the SEND system, we see figures that give cause for concern. In 2016 just 12% of pupils with SLCN as their main need achieved at least the expected standard in Reading, Writing and Mathematics at the end of their primary school years, compared to 53% of all pupils, a gap of 41 points. The 2016 attainment gap between children with SLCN and all children is largest for Writing (49%) and smallest for Maths (38%). On a more positive note, the overall gap has narrowed over the four years between 2013 and 2016, and narrowed more noticeably for this group of children than for children with special needs in general.'
>
> **Gascoigne and Gross 2017, p. 39**

Child language, behaviour and mental health

The role of language disorders as a 'missing link' for children and young people with antisocial behaviour has been considered only recently.[62] An association between language and problematic behaviour has been widely reported, however, and there is increasing evidence that the prevalence of speech, language and communication

57 Dockrell, J, E., and Howell, P. (2015). Identifying the challenges and opportunities to meet the needs of children with speech, language and communication difficulties. *British Journal of Special Education*, 42 (4), pp. 411-28; Scarborough,H. S., and Fletcher-Campbell, F. (2009) Connecting early language and literacy to later reading (dis) abilities: Evidence, theory, and practice, in Fletcher-Campbell, F., Soler, J., and Reid, G. (eds) *Approaching Difficulties in Literacy Development: Assessment, Pedagogy and Programmes*. Open University.

58 Catts, H. W., Fey, M. E., Zhang, X. Y., and Tomblin, J. B. (2001). Estimating the risk of future reading difficulties in kindergarten children: A research-based model and its clinical implementation. *Language Speech and Hearing Services in Schools,* 32 (1), pp. 38-50; Catts, H. W., Feyl, M. E., Zhang, X., and Tomblin, J. B. (1999). Language basis of reading and reading disabilities: Evidence from a longitudinal investigation. *Scientific Studies of Reading*, 3 (4), pp. 331-62.

59 Bishop, D. V. M., and Adams C. (1990). A prospective study of the relationship between specific language impairment, phonological disorders and reading retardation. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 31 (7), pp. 1027-50; Stark, R. E., Bernstein, L. E., Condino, R., Bender, M., Tallal, P., and Catts, H. (1984). 4-year follow-up-study of language impaired children. *Annals of Dyslexia*, 34, pp. 49-68.

60 Norbury et al (2016).

61 Gascoigne, M., and Gros, J. (2017) *Talking About a Generation: Current policy, evidence and practice for speech, language and communication,* The Communication Trust. http://www.thecommunicationtrust.org.uk/resources/resources/resources-for-practitioners/talking-about-a-generation/

62 Snow, P. C. (2013). Language competence: A hidden disability in antisocial behaviour. *InPsych*. June 2013. https://www.psychology.org.au/publications/inpsych/2013/june/snow/

needs (SLCN) is quite high among children who also experience social, emotional and behavioural problems (SEMH).[63] SLCD and SEMH are currently among the most prevalent types of special educational needs within England's primary education system, accounting for 21% and 17% respectively of children receiving special educational needs (SEN) support.[64] Such comorbid difficulties (occurring concurrently) are likely to negatively impact upon a child's social skills and reduce the quality and amount of their interaction with peers. This reduced peer interaction may, in turn, further restrict a child's opportunities for developing and practising language skills, which further contributes to language delays.

The degree of comorbidity between SLCD and SEMH is variable, however, creating a spectrum of association, including a group of children with overlapping difficulties in both domains. In addition, comorbidity is evident in both clinical and non-clinical populations of children, and multiple behavioural and mental health difficulties often go unidentified in mainstream education settings, because of a lack of adequate assessment processes. For example, persistent disruptive behaviour may keep underlying language difficulties from being diagnosed, if behavioural issues are treated as the primary problem.

Over time, undiagnosed language difficulties are likely to contribute to poor literacy and reduced achievement at school, as well as reduced employment success in adulthood. Studies also consistently observe a link between language difficulties in childhood and mental health problems in adulthood. For example, studies consistently observe a higher rate of past early language problems among adults with anxiety or social phobia disorders.[65]

Language difficulties are also strongly associated with behavioural problems, with studies observing consistently higher levels of disruptive and antisocial behaviour amongst children also identified with speech and language needs.[66] Overlapping language and behavioural problems may also increase children's risk of entering the criminal justice system.[67]

63 Van Daal, J., Verhoeven, L., and van Balkom, H. (2007). Behaviour problems in children with language impairment. *Journal of Child Psychiatry and Psychology,* 48 (11), pp. 1139-47; Ketelaars, M. P., Cuperus, J. M., van Daal, J., Jansonius, K. and Verhoeven, L. (2009). Screening for pragmatic language impairment: the potential of the children's communication checklist. *Research in Developmental Disabilities*, 30 (5), pp. 952-60; St Clair, M. C., Pickles, A., Durkin, K., and Conti-Ramsden, G. (2010). A longitudinal study of behavioural, emotional and social difficulties in individuals with a history of specific language impairment (SLI). *Journal of Communication Disorders*, 44 (2), pp. 186-89; Whitehouse, A. J. O., Robinson, M., and Zubrick, S. R. (2011). Late-talking and risk for behavioural and emotional problems during childhood and adolescence. *Pediatrics*, 128 (2), pp. 324-32.

64 Department for Education (2017). Special educational needs: an analysis and summary of data sources. https://www.gov.uk/government/publications/sen-analysis-and-summary-of-data-sources

65 Law et al (2009); Baker, L., and Cantwell, D. P. (1987). A prospective psychiatric follow-up of children with speech/language disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 26 (4), pp. 546-53; Beitchman, J. H., Wilson, B., Johnson, C. J., Atkinson, L., Young, A., Adlaf, A., Escobar, M., and Douglas, L. (2001). Fourteen-year follow-up of speech/language-impaired and control children: Psychiatric outcome. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40 (1), pp. 75-82.

66 Benner, G. J., Nelson, J. R., and Epstein, M. H. (2002). Language skills of children with EBD: A literature review. *Journal of Emotional and Behavioral Disorders*, 10 (1), pp. 43-59; Pickles, A., Durkin, K., Mok, P., Toseeb, U., and Conti-Ramsden, G. (2016). Conduct problems co-occur with hyperactivity in children with language impairment: A longitudinal study from childhood to adolescence. *Autism and Developmental Language Impairments.* (In press); Nelson, J. R., Benner, G. J., and Cheney, D. (2005). An investigation of the language skills of students with emotional disturbance served in public school settings. *The Journal of Special Education*, 39, pp. 97-105.

67 Stevenson, J., Richman, N., and Graham, P. (1985). Behaviour problems and language abilities at three years and behavioural deviance at eight years. *Journal of Child Psychology and Psychiatry*, 26 (2), pp. 215-30; Nelson et al (2005); Beitchman, J. H., Wilson, B., Brownlie, E. B., Walters, H., Inglis, A., and Lancee, W. (1996). Long-term consistency in speech/language profiles, II: behavioural, emotional, and social outcomes. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35 (6), pp. 815-25; Tomblin, J. B., Zhang, X., Buckwalter, P. and Catts, H. (2000). The

In this respect, studies have found that:

- 50% of the UK prison population have literacy difficulties, in comparison to 17% of the general population.
- Over 74% of young people in a youth offenders institute have below-average communication skills, and over 60% have speech, language and communication needs.
- Half of all young male offenders in Australian prisons have a clinically-significant, but undiagnosed language impairment.[68]
- Three-quarters young people in the UK youth offending system have below average communication skills, and just under a third have diagnosed speech, language, and communication needs (SLCN).[69]

Unidentified language difficulties may also interfere with young people's ability to benefit from the psychological therapies offered within the criminal justice system, which can be verbally demanding. For example, the success of cognitive behavioural therapy (CBT) is reliant on participants' language and verbal reasoning capabilities.[70]

Implications for policy and practice

The information provided in this chapter illustrates how language capabilities remain critical throughout school, affecting not only children's academic performance, but also their behavioural and emotional wellbeing. Once school is over, language capabilities continue to remain critical in the workforce, where communication skills are of paramount importance. These connections suggest an ongoing need for language monitoring systems that continue throughout primary and secondary school and effectively identify language problems and match children to the appropriate services as and when needed.

The findings presented in this chapter also highlight a gap in existing practice as it relates to identifying, assessing and treating language problems that may appear in the context of behavioural and other social and emotional disorders and vice versa. In this respect, more research is needed to understand the ways in which language problems and other cognitive and psychological disorders impact upon each other, as well as the prevalence of comorbid or overlapping problems. Such knowledge is necessary for understanding the cumulative effects of such co-occurring problems, as well as how they might best be treated through appropriately targeted interventions.

association of reading disability, behavioural disorders and language impairment among second-grade children. *Journal of Child Psychology and Psychiatry,* 41 (4), pp. 473-82.

68 Snow, P. C., and Powell, M. B. (2011). Youth (In)justice: Oral language competence in early life and risk for engagement in antisocial behaviour in adolescence. *Trends and Issues in Crime and Criminal Justice*, 435, pp. 1-6.

69 Royal College of Speech and Language Therapists. (2012). Language and Communication Needs in the Criminal Justice System and Best Practice responses to these. Speech. https://www.rcslt.org/about/docs/rcslt_justice_evidence_dossier_final

70 Snow (2013).

4. Child language and social disadvantage

Studies consistently observe a strong link between children's language capabilities and social disadvantage. This chapter describes the nature of this relationship and its impact on children's development as they grow older.

KEY POINTS

- Socioeconomic status (SES) is a risk factor for poor language environments. Children growing up in low-income households on average hear far fewer words and are exposed to a more limited vocabulary than those in middle- and higher-income homes.
- Income-related differences also exist in the ways in which parents talk to their children. Parents with professional backgrounds are more likely to ask questions and engage in language-rich activities with their children in comparison to low-income parents.
- The impact of social disadvantage on language development is evident at the preschool stage, at school entry and in later education; many children from low-SES families lag behind their high-SES counterparts in their language and reading test scores.
- Longitudinally, SES has been shown to have a greater impact on development than intellectual capabilities. Those from high-SES backgrounds are likely to develop an advantage in their learning regardless of whether they start with low, average or high ability at school entry. SES is therefore a significant contributing factor to achievement gaps throughout the school years.
- The negative impacts of SES on language development over time risk creating or perpetuating intergenerational cycles that preserve poverty and reinforce national inequalities in SES.

The early language gap

Multiple studies now suggest that area deprivation and socioeconomic status negatively impact children's core language skills before they enter school. For example, Roy et al (2014) found that preschool children whose parents or carers were of low SES and unemployed scored significantly lower on standardised measures of core language processes than children whose parents/carers were of mid-range SES and employed.[71] The authors concluded that differences between SES groups on core language indicate that even 'very basic, early developing language and speech skills may be affected in preschool children from socioeconomically disadvantaged neighbourhoods', skills which had been previously thought to be relatively free of the impacts of disadvantage.

Hart and Risley observed similar disparities in the achievement of a cohort of Head Start children in the 1980s, who demonstrated only modest improvements in their language capabilities, despite participating in enriched preschool education at ages 3 and 4. Hart and Risley hypothesised that the failure of the programme to make a

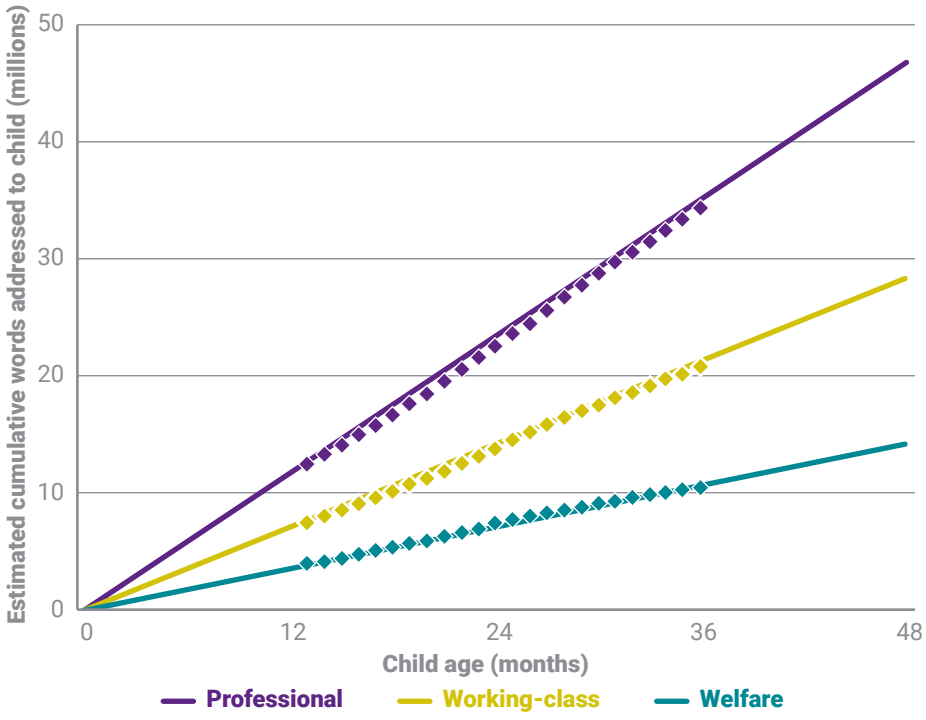
71 Roy, P., Chiat, S., and Dodd, B. (2014). *Language and Socioeconomic Disadvantage: From Research to Practice*. City University London.

difference may have been due to incorrect timing, suggesting that issues impacting children's language capabilities were likely occurring much earlier, before children entered the programme. This led to their groundbreaking '30 million word' study, which observed a strong association between children's language capabilities and the verbal stimulation they receive from their parents during their first three years.[72]

Specifically, Hart and Risley made hour-long recordings of conversations of 42 parent–child pairs at monthly intervals between the ages of 7 months and 3 years. Although the sample was small, Hart and Risley made sure that families from low-, middle- and higher-income families were equally represented. Hart and Risely observed dramatic differences in the number of words children heard, which increased with the families' level of income. Children living in low-income households heard an average of 616 words per hour; children with working-class parents heard approximately 1,251 words per hour; and children with professional parents heard an average of 2,153 words per hour. Over one year, these figures amounted to a difference of almost 8 million words between income groups. By the time children were age 3, this accumulated to a total gap of 32 million words, as illustrated in figure 4.1.

FIGURE 4.1

THE 30 MILLION WORD GAP: GROWTH IN CHILDREN'S VOCABULARY OVER TIME, BY SOCIOECONOMIC STATUS



Source: Hart and Risley 1995; reproduced from Law et al 2013

Hart and Risley additionally observed that there were substantial differences related to income in the quality and complexity of language features spoken to children. This is crucial, as 86–98% of words spoken by 3-year-olds were derived from the vocabularies of their parents. Higher-income parents asked their children more questions and were more likely to engage in verbally rich activities, such as

72 Hart, B., and Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Paul Brookes.

book-sharing and rhyming games. By comparison, lower-income parents asked fewer questions and engaged in less conversation with their children.

In a follow-up study, Hart and Risley observed that children's language acquisition at age 3 was predictive of their language capabilities at age 9. These findings led the authors to conclude that:

- Families of differing income vary greatly in the quantity of words spoken to their children.
- The quantity of spoken words is related to growth in children's vocabulary.
- Income-related differences exist between families in the amount of quality features in the language used between parent and child, and this is related to the quantity of spoken words.
- Vocabulary and the quantity of spoken words only explain part of the difference. Income-related gaps are also likely linked to the ways in which parents engage their children in conversation, including the questions they ask and the way they respond to their children's questions.

The home learning environment

Multiple studies conducted in the UK, United States and elsewhere have since replicated Hart and Risley's findings with much larger and more representative samples.[73] Studies have also found that income-based gaps are already present at 18 months, with higher-income children processing language at a significantly faster rate than their lower-income peers.[74] Findings such as these further underscore the important role that parents play in their children's early language development, as well as highlighting the significance of the home learning environment.

The quality of the home learning environment pertains not only to the amount of verbal stimulation children receive but also the extent to which children are exposed to other enriching learning activities, such as regular visits to libraries, parks and museums, shared parent/child reading, having high-quality toys, and parental monitoring of television viewing.[75] These activities are not only associated with positive learning outcomes during the preschool years but also predict children's academic achievement once they enter school.[76]

73 Kelly, Y., Sacker, A., Bono, E. D., Francesconi, M., and Marmot, M. (2011). What role for the home learning environment and parenting in reducing the socioeconomic gradient in child development? Findings from the Millennium Cohort Study. *Archives of the Diseases of Childhood, 10*, pp. 1-6; Pace, A., Luo, R., Hirsh-Pasek, K., and Golinkoff, R. M. (2017). Identifying Pathways Between Socioeconomic Status and Language Development. Annual Review of Linguistics, 3, pp. 285-308.

74 Fernald, A., Marchman, V., and Weisleder, A. (2013). SES differences in language processing skill and vocabulary are evident at 18 months. Developmental Science, 16, pp. 234-48.

75 Rodriguez, E. T., Tamis-LeMonda, C. S., Spellmann, M. E., Pan, B. A., Raikes, H., Lugo-Gil, J., and Luze, G. (2009). The formative role of home literacy experiences across the first three years of life in children from low-income families. Journal of Applied Developmental Psychology, 30, pp. 677-94; Roulstone, S., Law, J., Rush, R., Clegg, J., and Peters, T. (2011) Investigating the role of language in children's early educational outcomes: An analysis of data from the Avon Longitudinal Study of Parents and Children (ALSPAC). Monograph. Department for Education. http://www.education.gov.uk/publications/eOrderingDownload/DFE-RR134.pdf

76 Waldfogel, J., and Washbrook, E. (2011). Income-related gaps in school readiness in the United States and United Kingdom, in Smeeding T., Erikson, R., and Jantti M. (eds) *Persistence, Privilege, and Parenting: The Comparative Study of Intergenerational Mobility*. Russell Sage Foundation; Melhuish, E. C., Phan, M. B., Sylva, K., Sammons, P., Siraj-Blatchford, I., and Taggart, B. (2008). Effects of the Home Learning Environment and Preschool Center Experience upon Literacy and Numeracy Development in Early Primary School. Journal of Social Issues, 64, pp. 95-114.

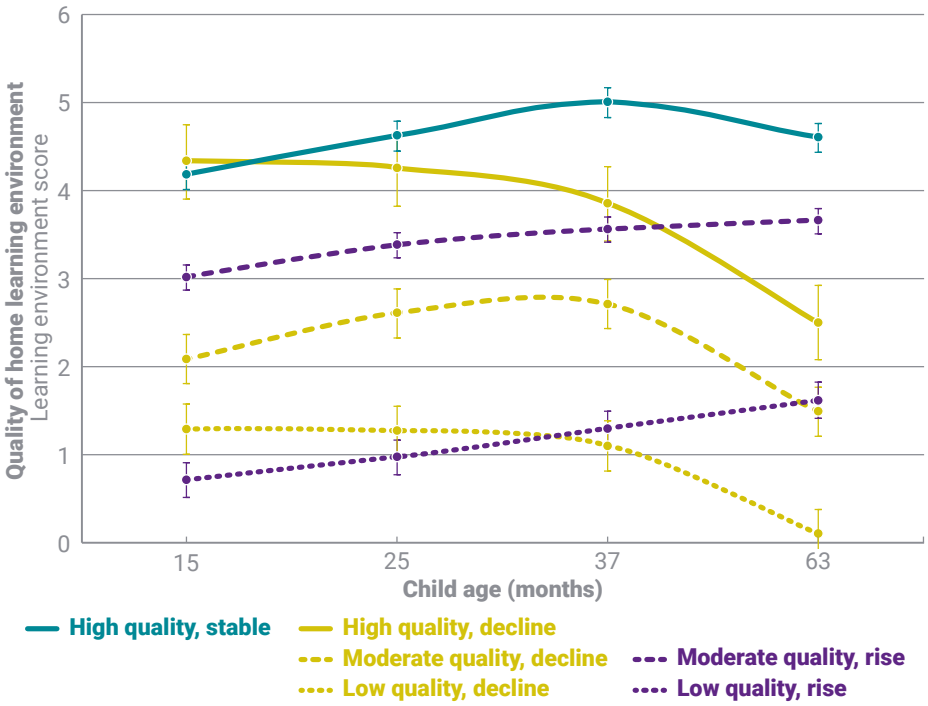
Multiple studies have also confirmed that an enriching home learning environment (HLE) is particularly important during the early stages of children's development.[77] For example, Rodriguez and Tamis-LaMonda (2011) found that HLE quality was already associated with children's language capabilities at 15 months.[78]

Beyond this, the authors found that the quality of the HLE fluctuates over time, resulting in six possible trajectories during the preschool years (see figure 4.2). These trajectories are:

- children experiencing high-quality HLE at 15 months that then remained stable (10%, referred to as 'high stable')
- children initially experiencing a high-quality HLE followed by decline (3%, 'high decline')
- children experiencing a moderate-quality HLE followed by a rise (31%, 'moderate rise')
- children experiencing a moderate-quality HLE and decline (46%, 'moderate decline')
- children experiencing a low-quality HLE and rise (3%, 'low rise')
- children experiencing a low-quality HLE followed by a further decline (8%, 'low decline').

FIGURE 4.2

FLUCTUATIONS IN THE QUALITY OF THE HOME LEARNING ENVIRONMENT DURING THE FIRST FIVE YEARS



Source: Rodriguez and Tamis-LaMonda 2011

77 Weisleder, A., and Fernald, A. (2013). Talking to children matters: Early language experience strengthens processing and builds vocabulary. Psychological Science, 24 (11), pp. 2143-52; Fernald et al (2013).

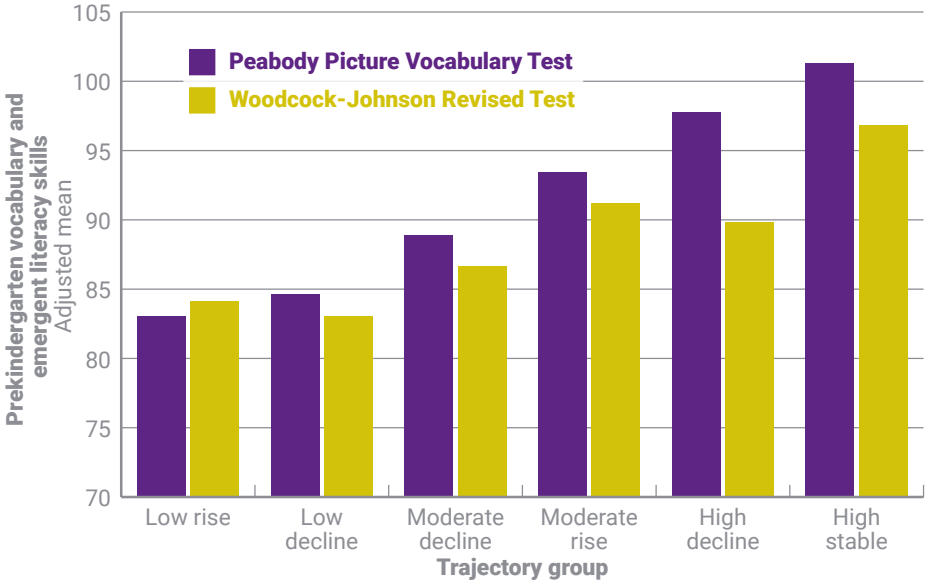
78 Rodriguez, E. T., and Tamis-LeMonda, C. S. (2011), Trajectories of the home learning environment across the first 5 years: Associations with children's vocabulary and literacy skills at prekindergarten. Child Development, 82, pp. 1058-75.

Children were more likely to experience a decrease in the quality of their HLE than they were an improvement. Nevertheless, the 'moderate rise' group experienced an increase in HLE quality such that it was higher than that of the 'high decline' group by the age of 5.

However, despite this reversal in HLE quality, Rodriguez and Tamis-LaMonda observed that the achievement outcomes of the high decline group remained higher than those of children in the moderate rise group, at least via one measure of vocabulary (see figure 4.3). This led the authors to conclude that efforts to 'catch up' the quality of the home learning environment during the preschool years were not as impactful as providing an enriched home learning environment from the start.

FIGURE 4.3

CHILDREN'S PREKINDERGARTEN VOCABULARY AND EMERGENT LITERACY SKILLS BY TRAJECTORY GROUP (ADJUSTED MEANS)



Source: Rodriguez and Tamis-LaMonda 2011

Family income is no doubt associated with the quality of the home learning environment. Not only does it increase children's access to high-quality toys and experiences, it is also linked to parents' level of education, which is also independently associated with children's language development and other learning outcomes.[79] Studies have found that if parental education increases during early childhood, child outcomes also improve. For example, Magnussen et al (2009) observed that young children's expressive and receptive language skills improved if their mothers entered post-secondary education after their children were born.[80] Specifically, young mothers' experiences in higher education were associated with increases in their responsivity towards their children, as well as improvements in HLE quality. These changes, in turn, predicted concurrent improvements in their children's language skills.

Thus, it is clear that maternal education is associated with improvements in the HLE, but these improvements are likely related to specific parental behaviours,

79 Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development, 74*, pp. 1368-78; Hoff, E. (2006). How social contexts support and shape language development. *Developmental Review, 26*, pp. 55-88.

80 Magnuson, K. A., Sexton, H. R., Davis-Kean, P. E., and Huston, A. C. (2009). Increases in maternal education and young children's language skills. Merrill-Palmer Quarterly, 55, pp. 319-50.

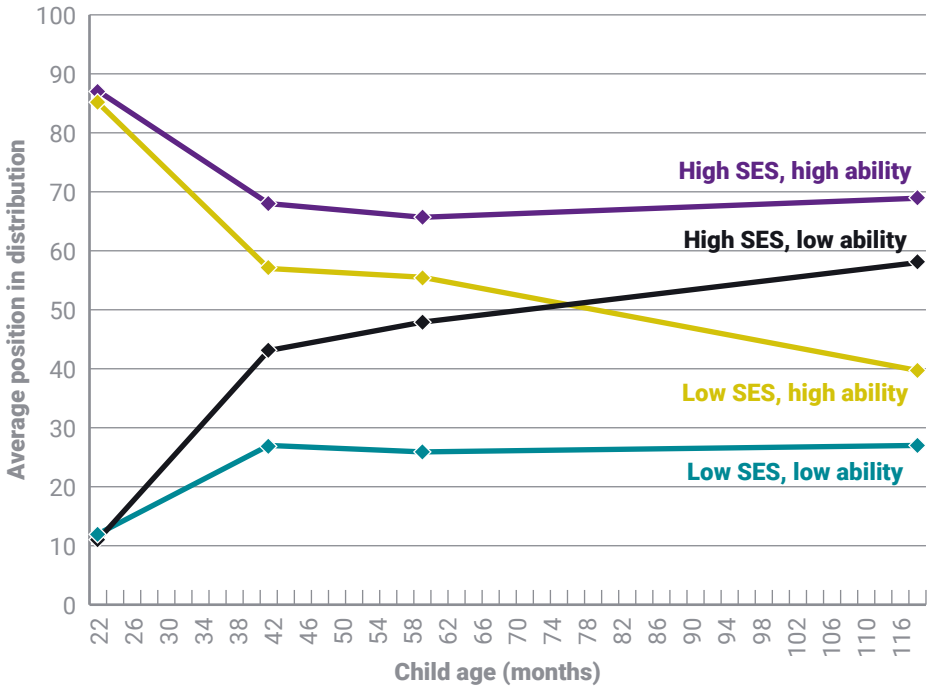
rather than parents' educational attainment per se.[81] Shared book-reading between parent and child, in particular, provides the vehicle through which aspects of parents' educational attainment are conveyed, including parents' knowledge of words and concepts, as well as their attitudes towards educational activities more generally. Shared book-reading has the additional advantage of exposing children to a wider vocabulary and range of grammatical structures than they would typically experience through their everyday conversations with their parents. It has therefore been suggested that the effect of book reading completely mediates the relation between maternal education and child attainment.[82]

The impact of social disadvantage and impaired language development over time

Studies also suggest that social deprivation is an important predictor of children's educational attainment and literacy. Building on the work of Hart and Risley, the 'Feinstein graph' (figure 4.4), demonstrates the longitudinal developmental relationship between level of learning ability and family socioeconomic status (SES).[83]

FIGURE 4.4

THE DEVELOPMENT OF THE COGNITIVE SKILLS OF CHILDREN OF HIGH AND LOW ABILITY, BY SOCIOECONOMIC GROUP



Source: Feinstein 2003

The graph shows average cognitive scores – captured through a variety of different measures – for four groups of children, between the ages of 18 months and 10 years. Test scores for children in the high-ability/high-SES and low-ability/low-SES groups are at the extremes of percentile ranks, and this is to be expected. However, the trajectory of learning for the other two groups – high-ability/low-SES and

81 Roulstone et al (2011).

82 Farrant, B. M., and Zubrick, S. R. (2012). Early vocabulary development: The importance of joint attention and parent-child book reading. First Language, 32(3), pp. 343-64.

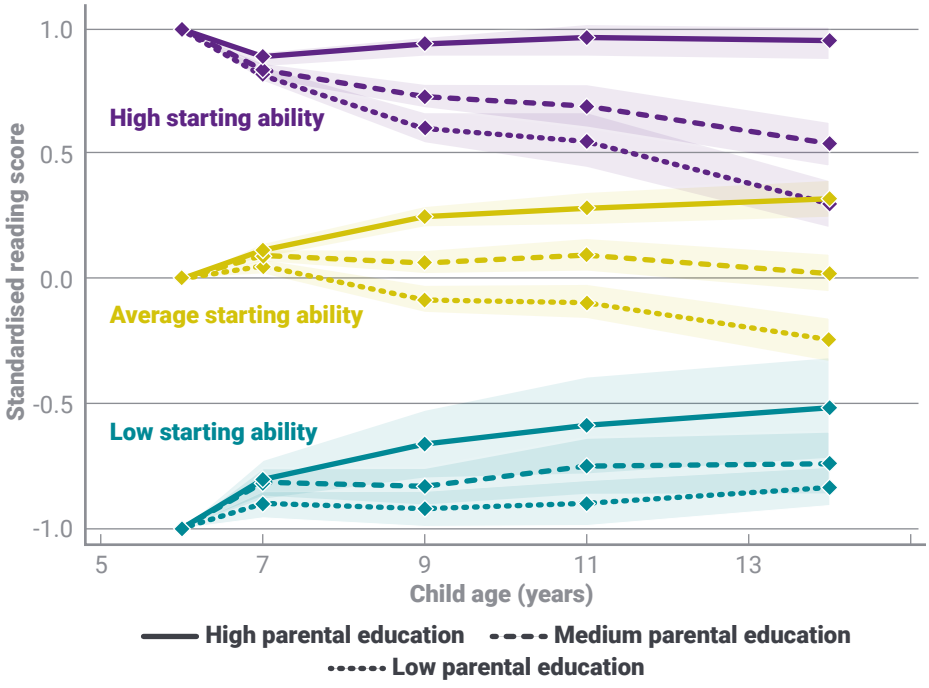
83 Feinstein, L. (2003). Inequality in the Early Cognitive Development of British Children in the 1970 Cohort. Economica, 70, pp. 73-97.

low-ability/high-SES – cross over. This was an unexpected finding, and it suggests that, given two children of low-ability and different SES, the child with higher SES will fare better over time in learning. Capable but poor children are overtaken by their less-capable but better-off counterparts in middle childhood. It appears that a child's socioeconomic status has a greater impact on their development than their ability to learn.

This pattern has been widely replicated across a number of key studies, to the point where it has become more than merely indicative or suggestive, and is now considered a fact within the academic literature. For example, Bradbury (2015) has shown that children who start school from different SES backgrounds but with the same level of reading ability begin to differ over time, resulting in an achievement gap that becomes increasingly large over time. This pattern is demonstrated in figure 4.5, which compares the change in children's reading scores between the ages of 6 and 14 on the basis of parental education, which is used as a proxy estimate of family income and SES.[84] It is likely that this gap is partially responsible for higher-income children's consistently higher attainment at GCSE stage, both in terms of their scores and completion rates.[85]

FIGURE 4.5

ACHIEVEMENT GAPS EMERGE OVER TIME BETWEEN CHILDREN FROM HIGHER AND LOWER SOCIOECONOMIC STATUS GROUPS, BY INITIAL ABILITY AND PARENTAL EDUCATION (STANDARDISED READING SCORE)



Source: Bradbury et al 2015

84 Bradbury, B., Corak, M., Waldfogel, J., and Washbrook, E. (2015). *Too many children left behind*. Russell Sage Foundation.

85 Spencer, S., Clegg, J., Stackhouse, J., and Rush, R. (2017). Contribution of spoken language and socio-economic background to adolescents' educational achievement at age 16 years. International Journal of Language and Communication Disorders, 52, pp. 184-96.

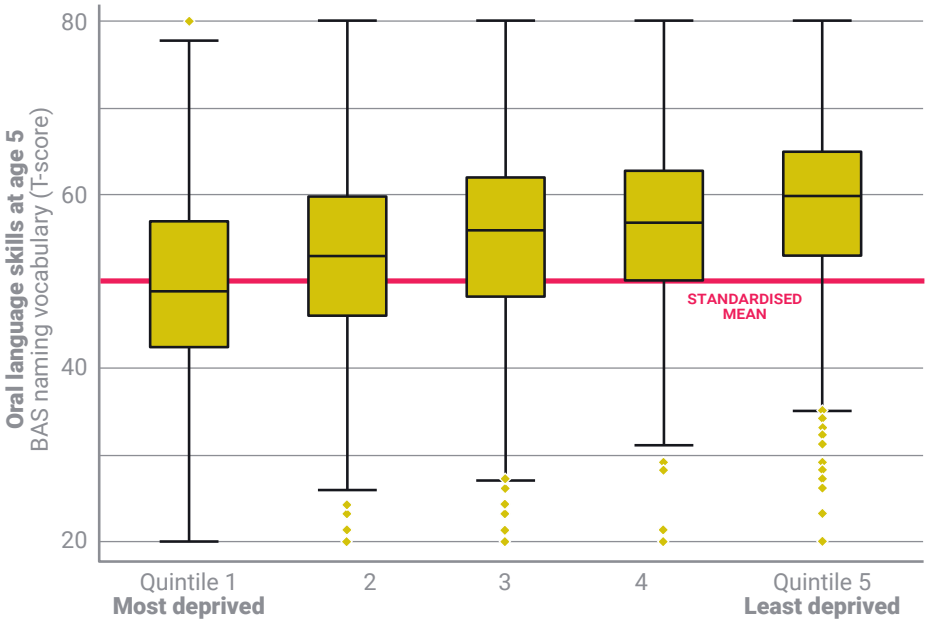
Collectively, these findings suggest that children from socially disadvantaged backgrounds are at disproportionate risk of language delay in comparison to those growing up in middle- and higher-income households. This risk most likely contributes or 'cascades' into other social, emotional and cognitive risks which additionally disadvantage children at school, in the community and ultimately in the workforce. Considering that income and employment are the most weighted contributors to overall indices of deprivation, it is clear that early disproportionate risk for language delay has substantial long-term implications for both the individuals concerned and society as a whole.

Discrepancies in language delay between socioeconomic groups exist in the UK to a significant degree, and this is reflected in data from the UK's most recent and comprehensive longitudinal cohort study, the Millennium Cohort Study (MCS). The MCS is a multidisciplinary longitudinal project, following the lives of around 19,000 children born in the UK in 2000 and 2001. Now in its 16th year, the study has completed five surveys of MCS members, when children were aged 9 months and 3, 5, 7 and 11 years old (the age 14 survey is currently underway).

Analysis of the MCS has found that children from the most socioeconomically disadvantaged groups are twice as likely to experience language delay as their less disadvantaged peers. Figure 4.6 demonstrates this social gradient in oral language skills among 5-year-old children, comparing vocabulary skills (using British Abilities Scales assessment data) between quintile groups defined by indices of multiple deprivation (IMD), from most deprived (lowest quintile) to least deprived (highest quintile). The reference line in the chart is the standardised mean for the British Abilities Scales assessment.

FIGURE 4.6

SOCIAL GRADIENT IN ORAL LANGUAGE SKILLS AMONG FIVE-YEAR-OLD CHILDREN, BY DEPRIVATION QUINTILE GROUP (VOCABULARY TEST SCORES)



Source: Law et al 2013

This chart shows that while there is some overlap across the means, a social gradient is clearly evident.[86]

86 Law, J., Todd, L., Clark, J., Mroz, M., and Carr, J. (2013) *Early Language Delays in the UK*. Save the Children. https://pdfs.semanticscholar.org/30e6/c0ad200eed0147a92f98b664cef2b7fbec96.pdf

Implications for policy and practice

The findings summarised in this chapter emphasise four important points about the relationship between social disadvantage and early language development.

- Income-related language gaps are strongly related to the quality of children's early verbal stimulation and other key aspects of the home learning environment.
- Income-related language gaps are already evident by 18 months and often increase throughout children's early development.
- Income-related learning gaps continue to increase once children enter school.
- Family income is associated with child language, but does not determine it. Child language and other learning outcomes are associated with processes that take place within low-income households, which are also amenable to change. These changes include improvements in parents' access to education and other resources, which enhance the home learning environment.

These points have a variety of implications for policy and practice.

- Income-related gaps in children's early language cannot be rectified simply through changes in family income.[87] Policies and practices must also address factors affecting the quality of the home learning environment.
- Increasing family access to enriching resources, such as books, toys and educational experiences, is unlikely to be sufficient. Strategies should also support the quality of parent–child interaction, including the quality of conversations parents have with their children.[88]
- Strategies should start early, certainly before children enter preschool and preferably before children are 2 years old.
- Strategies should not end in preschool but continue throughout a child's education, to ensure that the benefits of enriching early experiences are sustained.
- Strategies that support parents' own educational development are also likely to enhance children's early learning.

87 Heckman, J. J., and Mosso, S. (2014). The economics of human development and social mobility. Annual Review of Economics, 6, pp. 689-733.

88 Roseberry, S., Hirsh-Pasek, K., and Golinkoff, R. M. (2014). Skype me! Socially contingent interactions help toddlers learn language. Child development, 85 (3), pp. 956-70.

5. Conclusions and recommendations

This chapter summarises the evidence described in this report in terms of nine 'evidence-based' recommendations for policy and practice aimed at supporting children's language development.

Child language and the role of public health

Recommendation 1: Children's language development should be viewed as a public health wellbeing indicator, rather than just as an individual or 'clinical' concern.

Child language is similar to obesity and other risk factors (such as mental health and diet) in terms of its impact on children's overall wellbeing.[89] We therefore recommend that child language should fall under the remit of public health services.

Specifically, we would encourage local authority public health teams to jointly commission speech, language and communication services with other local authority colleagues and with clinical commissioning groups (CCGs).

We further recommend that health visitors and other early-years practitioners work together to deliver a consistent set of public health messages designed to increase parents' awareness about the importance of early language development and to provide them with strategies for supporting children's language learning at home.

Once children enter school, settings should be similarly optimised to support the language learning of all children, including those who have been identified as having additional language needs.

Recommendation 2: Child language development should be formally monitored between age two and five, so that those not making good progress are offered additional support.

Many have argued for the introduction of universal speech and language screening to identify children who may benefit from further intervention. This option has a number of limitations, however, including the accuracy and predictive validity of measures offered during the early years.[90] A practical alternative to universal screening would be to monitor children's language development on a regular basis over time by linking the existing health visitor assessment at 30 months with the

89 Marmot, M., Allen, J., Goldblatt, P., Boyce, T., McNeish, D., Grady, M., and Geddes, I. (2010). Fair society, healthy lives: The Marmot Review. http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review; Maggi, S., Irwin, L. J., Siddiqi, A., and Hertzman, C. (2010). The social determinants of early child development: An overview. Journal of Paediatrics and Child Health, 46, 627-35; Scotland Chief Medical Officer (2007). Health in Scotland 2006: Annual Report of the Chief Medical Office. NHS Scotland. http://www.gov.scot/Publications/2007/11/15135302/14

90 Law, J., Boyle, J., Harris, F., and Harkness, A. (1998). Child Health Surveillance: Screening for Speech and Language Delay. Health Technology Assessment. 2 (9), pp. 1-184; Nelson, H. D., Nygren, P., Walker, M., and Panoscha, R. (2006). Screening for speech and language delay: Systematic evidence review for the US Preventive Services Task Force. Pediatrics, 117 (2); Wallace, I. F., Berkman, N. D., Watson, L. R., Coyne-Beasley, T., Charles, T., Wood, C. T., Cullen, K., and Lohr, K. N. (2015) Screening for Speech and Language Delay in Children 5 Years Old and Younger: A Systematic Review. Pediatrics, 136 (2); Siu, A. L. (2015) Screening for Speech and Language Delay and Disorders in Children Aged 5 Years or Younger: US Preventive Services Task Force Recommendation Statement, Pediatrics, 136 (2).

Early Years Foundation Stage Profile (EYFSP) carried out on all children in England in reception class.

For example, local authorities might develop child records within the Healthy Child Programme that include both the specific language scales within the Ages and Stages assessment (ASQ) at 24–30 months and the three scales of the EYFSP that relate to communication and language. School nurses could also use these records to identify and refer children in need of additional support. At the community level, local authorities could include an analysis of this data as part of their joint strategic needs assessment, as well as use it to inform local strategic plans for improving educational attainment and child health and wellbeing more generally.

Child language and social disadvantage

Recommendation 3: Child language should be included as part of a national strategy for promoting social mobility.

We have presented evidence in chapter 4 of this report confirming a strong social gradient in children's language capabilities at all points throughout development, with differences based on socioeconomic status observable from the age of 18 months through to the end of secondary education. Already at 18 months, children living in middle and higher-income households process words faster than those living in lower-income homes. At the age of five, higher-income children consistently outperform their lower-income peers by at least one standard deviation on validated measures.[91] By the end of secondary school, upper-income children consistently complete more GCSEs and attain higher scores.

It is important to note, however, that family income does not directly cause language delays. Rather, family income is associated with differences in children's exposure to language. Specifically, middle and higher-income parents on average give their children more opportunities to practise language skills in comparison to low-income parents, by talking to them more, asking more questions and giving more corrective feedback.[92] We believe that language-related social inequalities could be partially rectified through interventions that teach low-income parents similar skills for supporting their children's language development.[93]

We also believe that the benefits of language interventions in the home are more likely to endure when low-income children have access to enriching childcare and preschool provision from at least age 2 onwards.[94] We therefore recommend that enriched educational opportunities for low-income children should not end in

91 Dickerson, A. and Popli, G. K. (2014). Persistent poverty and children's cognitive development: Evidence from the UK Millennium Cohort Study. Sheffield Economic Research Paper Series, University of Sheffield.

92 Marchman, V. A., Martínez, L. Z., Hurtado, N., Grüter, T., and Fernald, A. (2017). Caregiver talk to young Spanish-English bilinguals: comparing direct observation and parent-report measures of dual-language exposure. Developmental Science, 20 (1).

93 Irwin, L. J., Siddiqi, A., and Hertzman, C. (2007). Child development: A powerful equaliser Final report for the World Health Organisation Commission on the Social Determinants of Health. Human Early Learning Partnership; United Nations Children's Fund (2012). Inequities in Early Childhood Development: What the data say - Evidence from the Multiple Indicator Cluster Surveys. United Nations Children's Fund; Law, J., Reilly, S., and Snow, P. (2013) Child speech, language and communication need in the context of public health: A new direction for the speech and language therapy profession. International Journal of Language and Communication Disorders, 48 (5), pp. 486-96; Wylie, K., McAllister, L., Davidson, B., Marshall, J., and Law, J. (2014) Shifting towards Public Health?: Considerations for SLP Educational Programs New Horizons in Speech Language Pathology, Folia Phoniatrica et Logopaedica, 66, pp. 164-75.

94 Ramey, C. T., and Ramey, S. L. (1998). Early intervention and early experience. *American Psychologist, 53*, pp. 109-20.

preschool but continue throughout children's schooling, so that the benefits from earlier interventions are sustained.

Family interventions and enriched education are expensive, however, and likely beyond the resources available in most local authorities. We therefore recommend that central government considers the funding of evidence-based interventions as part of its wider strategy to improve social mobility.

The need for further research

Recommendation 4: Future research should consider the impact of childhood language development on an individual's life course.

Children's ability to understand and communicate through language is not only critical for their success in the early years but at all points of their development. Yet relatively is little is known about the impact of child language on adolescent and adult outcomes. We believe this could be rectified through more large-scale birth cohort studies investigating language development throughout the life course.

Currently, the majority of research involving child language continues to involve small clinical samples. Although such studies are useful for understanding the nature of language difficulties, they restrict our knowledge of individual variation within normal developmental trajectories. More studies investigating the nature of typical language development through large-scale population studies would not only improve our understanding of individual differences, but also help us to better understand the specific impact of various language disorders as children develop.

We also believe that studies could do more to consider the impact of child language on a variety of other developmental outcomes. While multiple studies have considered the relationship between child language and children's reading achievement, relatively few have considered the impact of children's language in other academic domains. Further research is also required to better understand the impact of language difficulties on children's mental health and conduct problems, and on their employment opportunities when they are adults. Such knowledge will not only improve our understanding of the role language plays in children's development, it will also improve our ability to estimate the costs associated with various language disorders (see recommendation 7).

We further recommend that more studies investigate the relative impact of various risk and protective factors on language capabilities at key points in children's development. These studies should also consider the extent to which various risk factors are amenable to change, and whether positive change is sufficient for rectifying negative developmental trajectories over time. Such knowledge would improve our understanding of how and when to intervene, as well as help to rectify income-related language disparities.

Finally, we recommend that studies are commissioned to evaluate the effect of early language development on social mobility, to ascertain the extent to which early language difficulties feed through into both employment and progression within employment. This needs to go beyond the young person's initial entry into employment and include their experiences in their 30s and 40s, once employment has become stable and progression within employment becomes clearer. Our concern is that the centrality of communication skills in the modern labour market likely disadvantages those with lower language skills in terms of their employment opportunities and wages.

Recommendation 5: More robust evaluation research is required to test and develop interventions aimed at supporting children's language development.

We believe that more research is required to further test and develop effective interventions for preventing and treating language disorders. These studies should be of the best possible quality, involving designs which are capable of attributing causality (such as through randomised controlled trials or appropriate quasi-experimental designs) and capturing important contextual factors. Ideally, these studies should include parallel economic analyses making use of cost–benefit calculations and economic modelling to explore the potential for any monetary savings. We provide examples of how this might be done under recommendation 7.

We also recommend that more studies test the core assumptions – the theory of change – underpinning intervention models. Such studies are necessary to test assumptions about an intervention's primary target population, its ideal 'dosage' (the amount necessary to create change) and the extent to which core resources (including staff time and materials) are required for specific short- and long-term outcomes. We also believe that more research is needed to understand the training needs of practitioners who support children's language development. This research would of course involve early-years and nursery workers, but also social workers, foster carers, crèche workers and others.

Recommendation 6: The adoption of common criteria and terminology to measure and identify language difficulties would assist in the development of a coherent and replicable model of intervention and research.

We recommend that researchers adopt the terminology and approach proposed by the CATALISE team lead by Professor Dorothy Bishop at Oxford University to ensure that children with language learning difficulties are described in a consistent fashion, thereby allowing greater comparability across studies. This applies both to the use of the term 'developmental language disorder' for the most marked cases, and to the need to capture not only test scores but also how children are functioning more generally at school and at home.

The costs and benefits of intervention

Recommendation 7: We need to better understand the costs of early language difficulties at a societal level alongside the potential benefits of effective interventions.

The extent to which the costs of public services can be offset by effective interventions is increasingly becoming a policy concern.[95] Central to economic evaluations are good-quality estimates of costs and benefits that capture the full range of impacts on the public sector, individuals and wider society.

Child language difficulties can be costly, with children seeing multiple professionals before their problem is properly diagnosed and treated. The process may begin with a health visitor or GP, who first recognises that there may be an issue and refers the child to a paediatrician for a hearing check. If speech and language difficulties are identified, the child is then likely to be seen by a speech and language therapist, and may also receive additional support in their classroom from their teacher and teaching assistants. The child may also need an assessment from an educational psychologist and/or other specialists who provide support to children with special needs. Additional

95 Sefton, T. (2000). Getting less for more: Economic evaluation in the social welfare field. Centre for Analysis of Social Exclusion, London School of Economics.

costs may be incurred if the child also develops behavioural problems, requiring the involvement of more professionals and potentially the criminal justice system.

The simplest way to estimate the cost to the public sector of child language difficulties is to start with the unit costs (including wages and other non-wage labour costs) of speech and language therapists and other related service providers.[96] This is effectively a value of the average 'opportunity cost' to the public sector of providing these services. However, such approaches are often challenging, because they require information about the hourly cost of staff time, the number of times a child may be in contact, the duration of these contacts, and the extent to which additional public services are required. It may also be challenging to isolate the direct impacts of speech and language services, because language difficulties rarely occur in isolation. From this perspective, it can be difficult to determine when costs incurred by one agency have obviated the need for involvement from another, thus obscuring a service's total benefit.

We also believe that the long-term benefits of speech and language interventions could be better understood.[97] For example, one 2010 study observed a potential economic return of £6.43 for every £1 invested in enhanced speech and language therapy offered to primary school-aged children with specific language impairment (based on a 15-week programme, consisting of three 30-minute sessions per week).[98] These benefits were based on returns related to improved educational achievement at school, as well as increases in adult earnings.

The educational context

Recommendation 8: There is a need within an educational context for a better understanding of the relationship between oral language skills and literacy.

There is a need in England to recognise the impact of language on children's literacy within the SEND guidelines for educators. Speech, language and communication needs (SLCN) is currently recognised in relation to communication and interaction, but not cognition and learning. The SEND Code of Practice refers to SCLN, yet defines these needs as primarily difficulties with communication: aspects of language that relate to how a child interacts with others. There is a gap here for SLCN to be defined more specifically by its constituent parts: difficulties with phonology, expressive, receptive, and pragmatic language and communication.

Similarly, there is a gap in education guidelines for information about other disorders that language difficulties are a part of, beyond autism spectrum disorder (ASD), such as externalising or internalising behaviour disorders/difficulties including ADHD or emotional problems, and moderate or specific learning difficulties.

Recommendation 9: There is a need for local authorities and schools to be explicit about the offer they are making to the parents of children identified with SLCN.

There has been substantial change in the national landscape of legislation for special educational needs (SEN) with the introduction of new regulations outlined in the Children and Families Act 2014 and a new Code of Practice for children with

96 Beecham, J. (1995). Collecting and estimating costs, in Knapp M. (ed) The Economic Evaluation of Mental Health Care. Arena; Beecham, J. (2000). Unit Costs: Not exactly child's play: A guide to estimating unit costs for children's social care. Department of Health, Personal Social Services Research Unit (PSSRU) and Dartington Social Care Research Unit. www.pssru.ac.uk/pdf/B062.pdf

97 Scott, S., Knapp, M., Henderson, J., and Maugham, B. (2001) Financial cost of social exclusion: follow-up study of antisocial children into adulthood. BMJ, 323, pp. 1-5.

98 Marsh et al (2010)

special educational needs and disabilities (SEND; details of which are provided in appendix 4). The new Code of Practice now covers children and young people of ages 0–25 years, and those with disabilities as well as those with SEN. Children and young people now have increased participation and involvement in decision-making about services and provision, and there is a greater focus on outcomes and long-term trajectory through education to adulthood. There is now coordinated assessment for children with more complex needs than SEN support, leading to the new 0–25 Education, Health and Care (EHC) plans. Local authorities are now required to publish a 'local offer', which sets out the universal, targeted and specialist provision expected to be available for children and young people in the area who have SEN, including those who do not have EHC plans.

The percentage of pupils with speech, language and communication needs who have an EHC plan is reported as 14%, which is the second highest of any primary type of need for SEN support, behind ASD. The percentage of pupils with speech, language and communication needs who receive SEN support is reported as 20.9%, the second highest of any primary type of need for SEN support, behind moderate learning difficulty. Under the new legislation, speech and language therapy will almost always be a special educational provision.

It is important that schools understand their role as commissioners of support for SLCN. This includes understanding how their provision relates to the local offer.

Conclusions

In this report, we have described the critical role that early language development plays in all aspects of children's development. We believe the fundamental link between language and other social, emotional and learning outcomes makes early language development a primary indicator of child wellbeing.

Differences between those more and less socially disadvantaged children are already observable in the second year of life, and in many cases are sustained through to adulthood. Language learning difficulties often go hand-in-hand with social and emotional difficulties and, unsurprisingly, have a marked effect on children's school achievement.

We believe there is now a strong case for monitoring these skills throughout the school years and into employment, where communication skills are highly valued. This is not a matter of one-off screening, but of regular monitoring throughout the course of children's development.

Appendix 1: Key organisations in the UK with an interest in language development

I CAN (http://www.ican.org.uk/en/) describes itself as the children's communication charity. Its mission is that no child should be left out or left behind because of a difficulty speaking or understanding. It runs a number of programmes for children with speech and language needs in children's centres, nurseries and preschool – Early Talk Boost, Early Talk – catch-up programmes in primary schools – Talk Boost, Primary Talk and the Early Child Development Programme – programmes in secondary schools – Secondary Talk – for teaching staff – Talk about Talk – and programmes for young offenders. I CAN provides training for school staff, offers a programme of accreditation and runs a licensee network across the UK. It runs two of their own specialist schools for children with severe language difficulties, and operates an online portal for parents and carers – Talking Point. I CAN also has a strong focus on campaigning and lobbying. I CAN, in partnership with the Royal College of Speech and Language Therapists, will undertake an independent review of the state of provision for children's speech, language and communication needs (SLCN), entitled *Bercow – Ten Years On*, to be published in early 2018. I CAN's primary audiences are practitioners and parents, and it provides a range of one-day courses for practitioners.

Afasic (http://www.afasic.org.uk/) supports parents with children who have difficulties talking and understanding language. Founded in 1968, it is a parent-led organisation to help children and young people with speech and language impairments and their families. It provides information and training for parents and professionals, and produces a range of publications. Members meet in local groups in many areas of the UK. Afasic seeks to raise awareness and to create better services and provision for children and young people with speech and language impairments. It works in partnership with local and national government, professional and statutory bodies and other voluntary organisations.

The Communication Trust (https://www.thecommunicationtrust.org.uk/) is a coalition of over 50 not-for-profit organisations. The trust was founded by Afasic, BT, the Council for Disabled Children and I CAN in recognition that in order to make a lasting impact for children and young people, particularly those with SLCN, we need to work collaboratively and collectively. Working together the trust supports everyone who works with children and young people in England to support their speech, language and communication. A key role of the Communication Trust is to respond to upcoming policy changes that could potentially affect children and young people with speech, language and communication needs. The Communication Trust produces a variety of materials for parents and practitioners. The What Works for SLCN website (http://www.thecommunicationtrust.org.uk/projects/what-works/whatworkssearch.aspx) developed out of the work of the Better Communication Research Programme. The What Works database provides a comprehensive set of evidence-based interventions for use by speech and language therapists and other practitioners with a special interest in speech, language and communication development.

Voice 21 (https://www.voice21.org/) is a relatively new charity which promotes access to high-quality oracy education for all children and young people, regardless

of their background. Its aim is to enable children and young people to develop the communication skills and confidence necessary to thrive in the 21st century by:

- building a movement of educators committed to improving the speaking and listening skills of students, throughout state schools across the UK
- creating an infrastructure of oracy hub schools to develop good practice in oracy teaching and share this with other schools in their localities
- dramatically boosting the body of resources, materials, guidance and support on the teaching of oracy
- devising national standards and expectations for oracy and the means and methods for measuring progress in speaking and listening
- influencing decision-makers to leverage their power to create the conditions that will encourage all state schools to teach oracy as part of their standard practice and curricula.

Voice 21's focus is based on research into the importance of oracy in the classroom.[99] It has completed one intervention study into the value of oracy intervention in the classroom[100] and is currently running a second study, both funded by the Education Endowment Foundation (see below).

The Early Intervention Foundation (EIF) (http://www.eif.org.uk/) is an independent charity and one of the government's What Works Centres that supports the use of effective early interventions for children with signals of risk. The work of EIF covers a variety of key issues, including the early years, inter-parental relationships, social and emotional skills, gang and youth violence, and the role of the police in early intervention. EIF funds projects around these issues that include reviewing evidence for early intervention, and supporting effective early interventions in local areas or workforces, as well as acting as a knowledge resource; including on their website a guidebook to early intervention programmes and good evidence of impact, and publications covering their several key issues. Current objectives of EIF are to look at language, communication and children's socioemotional development and the need to address these areas in relation to early intervention.

EIF's *Foundations for Life* (2016) report provides advice for policy-makers and commissioners about how parents may improve interactions with their children in order to enhance their childhood experiences, ability to flourish and avoid harm.[101] The report highlights that parent–child interactions in the early years' matter, and that there are a number of early signals of risk to children's development such as insecure attachment, delayed speech and language, behaviour difficulties and lack of maternal sensitivity, which may be effectively addressed by evidence-based programmes. The report reviews early interventions available in the UK that lead to improved child development in terms of attachment, behaviour and cognitive development. It is reported that within the field as a whole, there is a need for more evidence, including more evaluations of programmes, with more rigorous testing and long-term evaluations across multiple sites; currently it is problematic to draw firm conclusions about the effects of a programme when only a small number of evaluations have been carried out on it. Evidence was found

99 Millard, W., and Menzies, L. (2016). *The State of Speaking in Our Schools*. Voice 21. http://media.wix.com/ugd/2c80ff_91a02276fdf645d2b70ad433049306a3.pdf

100 Maxwell, B. Burnett, C., Reidy, J., Willis, B., and Demack, S. (2015). *Oracy Curriculum, Culture and Assessment Toolkit Evaluation Report*. Sheffield Hallam University.

101 Asmussen, K., Feinstein, L., Martin, J., and Chowdry, H. (2016) *Foundations for Life: What Works to Support Parent Child Interaction in the Early Years*, Early Intervention Foundation. http://www.eif.org.uk/publication/foundations-for-life-what-works-to-support-parent-child-interaction-in-the-early-years/

to be strongest for target-indicated programmes – those based on early signs of risk in children's development of attachment, behaviour regulation and learning. However, the report stressed that this is not to say that universal interventions or those that are target-based on other factors such as demographics are ineffective. Assessment of local need, purpose and the feasibility of implementing a high-quality intervention should inform the commissioning of services. Programmes targeting children's behavioural development are reported to have 'better evidence of effectiveness' than those targeting attachment or cognitive development. Again, it is stressed that this does not mean attachment or cognitive interventions are ineffective, rather there is a need for more evaluation. Programmes that aimed to improve cognitive development were found to be relatively weak in evidence-base, and those that had good evidence of effectiveness were of medium cost. Social disadvantage was consistently linked to poor cognitive and language development, and it is reported that parenting interventions 'do not fully replace the need for centre-based provision for young children living in disadvantaged circumstances'. Early childcare settings make significant contributions to children's cognitive development including language development, therefore a good relationship between these settings and parents/carers is vital and both must have a clear understanding of the effect each party has on development.

The Education Endowment Foundation (EEF) (https://educationendowmentfoundation.org.uk/) is an independent grant-making charity dedicated to 'breaking the link between family income and educational achievement', ensuring all children regardless of background can fulfil their potential and talents. EEF received a large-scale founding grant from the Department of Education (£125 million), and strives to award up to £200 million in its 15-year lifespan through investment and fundraising. Like EIF, EEF is also part of the government's What Works network for improving education outcomes for school-aged children. EEF has one main target, to decrease the attainment gap, and it recognises the significant impact social disadvantage has on this gap. Its approach to tackling this problem focuses on investing in evidence-based projects, rigorously testing their ideas and then making results and reports available to relevant parties who can make a difference – including schools and professionals via their Teaching and Learning Toolkit, Early Years Toolkit, and literature review resources. Toolkit resources are summaries of educational research and within these a variety of approaches for intervention are listed against an indication of 'months impact' – that is, the additional months' progress that can be expected in children as a result of particular approach – as well as an indication of the cost of intervention.

Communication and language approaches are listed in the Early Years Toolkit, against a six-month impact factor and indication that these approaches are low cost. The toolkit summarises the evidence for communication and language approaches, stating that, overall, studies consistently show positive benefits for children's language learning, including spoken language, expressive vocabulary, and early reading skills. It also highlights that slightly larger effects of intervention are found for children from disadvantaged backgrounds. It recognises the need to adequately train adults who will be directly involved in approaches for children as well as the consideration that multiple communication and language approaches are likely to be needed to ensure the most effective progress, rather than one single approach. In the same format, Phonics and Reading comprehension strategies are addressed in the Teaching and Learning Toolkit, against four- and five-month impact factors respectively and an indication of low cost. It is suggested that teaching phonics is particularly beneficial for younger learners (4–7-year-olds),

and more effective than other approaches to early reading (such as whole language or alphabetic approaches). Furthermore, effective phonics approaches are usually embedded in a rich literacy environment, and delivered by qualified teachers who are reported as being twice as effective as other staff.

These toolkits are therefore useful resources for schools and adults engaged with intervention for children and allow for ease of comparison between different approaches. They create the opportunity for adults other than therapists or clinicians to deliver intervention approaches, therefore increasing the amount of contact time that children have with intervention and accelerating development and progress. The EEF values the sharing of knowledge and understanding to tackle problems. In addition to toolkit resources it also operates a Families of Schools Database to help facilitate collaboration between schools facing similar challenges to help them learn from one another. The database also provides case studies from individual schools across the country.

Appendix 2: Key research initiatives with a focus on language development

The ESRC International Centre for Language and Communicative Development (LuCiD) (http://www.lucid.ac.uk/) is a five-year research collaboration which works with partners across the world to transform our understanding of how children learn to communicate with language. LuCiD's work aims to bring about a step-change in our understanding of how children learn to communicate with language and this includes capturing the evidence base for effective interventions in early years' education and healthcare. The group's work covers four key areas: research; technology development to support researchers, professionals and parents to understand children's language learning; capacity building for language acquisition research; and communication of findings to those who need them most. LuCiD provides resources for researchers, professionals, parents and policy-makers, which include relevant publications, talks and an output database of research from the LuCiD Centre. The work of LuCiD is highly relevant to the current national landscape of language provision and need. LuCiD recognises the importance of early intervention in the preschool years and is currently working in nursery settings with practitioners to create a language-rich environment; information collected is also made available to parents. Currently, LuCiD is also running a longitudinal study of child language from birth to school readiness: 'The Language 0–5 project', which began in 2014 and will run for five years. This study will provide detailed explanations of 'the way in which children's language-learning mechanisms interact with changes in their knowledge and processing abilities over the course of development', while also determining 'the way in which a child's family circumstances affect language development, and deliver practical, evidence-based advice about the determinants of poor language growth'. In addition, in collaboration with the Royal College of Speech and Language Therapists, LuCiD is developing a series of workshops on specific research techniques for speech and language therapists. Materials used by researchers are also made available to therapists, providing an important link between research and practice.

The Centre for Research Excellence in Child Language (CRE) (https://www.mcri.edu.au/research/centres/centre-research-excellence-child-language) is an Australian-based international collaboration of child language experts. Staff use the latest approaches in molecular genetics, neuro-imaging, epidemiology, biostatistics and health economics to investigate factors that affect and improve child language and development. One of the key developments of the CRE is the focus on population data and the harmonisation of datasets that enable researchers to ask population-level questions. Indeed, the CRE will have created the world's largest harmonised language repository, bringing language into the lexicon of non-communicable disease and population health. This language repository will provide an unprecedented opportunity to analyse how language develops, what goes wrong, what this costs for families and society, and when and how to intervene. Although primarily research focused, the CRE has produced a number of policy documents[102] and a series of research 'snapshots' for parents and professionals

102 Law, J., Mensah, F., Westrupp, E., and Reilly, S. (2015). *Social disadvantage and early language delay*. Centre of Research Excellence in Child Language, Policy Brief 1.

addressing key issues in the field. The CRE also fed extensively into the Australian senate committee report on services for children with speech and language needs.

Thirty Million Words (TMW) (http://thirtymillionwords.org/) **and Bridging the Word Gap** (http://www.bwgresnet.res.ku.edu/). Based on research by Hart and Risley (1995) that discovered some children heard over 30 million fewer words by their 4th birthday than others, the TMW initiative is a parent-directed programme based in Chicago, US, designed to close the achievement gap and use the power of parent language to give children the best start in life. The TMW initiative includes a curriculum that targets both the cognitive and behavioural development of children, combining education and technology. The education component of the curriculum uses animation to demonstrate concepts and video of parent–child interaction, while the technology component uses quantitative linguistic feedback from weekly recordings of a child's language environment by the Language Environment Analysis (LENA) word pedometer. Feedback is shared with parents as a way of tracking personal goals and motivating parents to continue to improve their interactions. The TMW curriculum has been tested with 17 caregivers, and results showed a significant increase in the number of words and conversational turns used by caregivers to their children from before and after TMW curriculum. The TMW initiative has completed a randomised controlled trial of its curriculum, including eight weekly one-hour visits of education, LENA recordings and linguistic feedback (treatment group) compared to a nutrition intervention and LENA recordings without feedback. The treatment group has shown a significant increase in their talk and interaction with their child compared to controls.

The Bridging the Word Gap Research Network is a US-based national network of more than 100 researchers, practitioners, policy-makers and funders working together to 'develop and push forward a coordinated national research agenda that addresses the word gap'. The main aim of the network is to reduce the number of children entering school with delayed language and literacy. Its work includes the development and testing of innovative research projects related to interventions and strategies designed to reduce the word gap. In 2015, the network articulated a National Research Agenda with the aim of building an infrastructure to advance the field of intervention to reduce the word gap. This agenda was developed using a conceptual model for describing multiple levels of intervention research related to the word gap, an online survey to identify the most important research priorities, survey data from over 1,000 stakeholders invested in bridging the word gap, and public comment. The agenda has led to the network identifying 10 research priorities, which include developing new strategies for promoting language for parents, examining existing language-promoting strategies to determine which are most effective, and developing new strategies for language development aimed at early education teachers and childcare providers.

The Better Start Programme (https://www.abetterstart.org.uk/) is a major programme of work in five local authorities across England (Blackpool, Bradford, Lambeth, Nottingham and Southend-on-Sea) funded by the Big Lottery Fund. Each target authority is required to focus on three key areas within the first two or three years of life: 'social and emotional learning', 'language and communication' and 'nutrition'. Each authority has opted for specific interventions, and children and families included in the programmes will all be tracked throughout their involvement. The programme will be evaluated by a team from Warwick University in conjunction with a 'preventonomic' economic evaluation carried out by the London School of Economics. The programme will be customised for each of the geographical locations and will provide before and after data. Although the children will be followed up without control groups which make it difficult to

casually link the intervention and the outcomes, critically the programme will provide detailed information about how interventions are delivered and how best to engage practitioners in the process of change, encouraging them to replace unevaluated or ineffective interventions with those that are more robust. The Better Start programme will report interim results on an annual basis but the final results will not be available for a number of years.

Practitioner/researcher networks: Over the last five years there have been three COST Action networks funded by the EU all of which have brought together practitioners from the field of linguistics, psychology, speech and language science, and education in sharing ideas about theory and practice related to children's language development. The first (Action A33, entitled 'Cross-linguistically robust stages of children's linguistic performance') ended in 2010. The second (Action IS0804, 'BI-SLI: Language Impairment in a Multilingual Society: Linguistic Patterns and the Road to Assessment') ended in 2013, and the third (Action IS1406, 'Enhancing children's oral language skills across Europe and beyond: a collaboration focusing on interventions for children with difficulties learning their first language') is ongoing.

All of them are relevant to a life chances approach, while the latest is especially apposite with the following three working groups.

1. The linguistic and psychological underpinnings of interventions for LI covering questions such as: What are the key skills that we need to be targeting in interventions – for example language knowledge and skills, working-memory and other relevant cognitive (for example meta-cognition) and wider processing skills (attention and executive functioning)?
2. The delivery of interventions for LI asking questions such as: How have we developed evidence-based service delivery models for children with LI (for example individual vs group therapy, direct vs indirect therapy, mainstream vs special schools, the use of ICT in service delivery)?
3. The social and cultural context of intervention for children with LI asking questions such as: What institutional (physical, managerial) and sociocultural factors (demographics, ethnicity, migration, changing family structures) impact on the interventions provided to children with LI?

The findings of these networks will be of direct relevance to practice in the UK.

Appendix 3: Key professional initiatives with a focus on language development

The Australian Senate Committee Report:[103] The Senate Committee made a series of recommendations to the Australian government of which the most salient are the need to collate evidence about service need and delivery using good quality data. In particular, the committee was interested in mapping services against the Australian Early Development Index information about vulnerable communities. It suggested that the federal government should provide funding and support for an appropriate research institute to conduct a thorough and systematic audit of the adequacy, strengths and limitations of existing speech and language services for children in Australia. The audit should consult with children's health and education providers, including but not limited to early childhood education and care centres, primary schools, secondary schools, speech and language therapists and special needs coordinators.

The committee proposed that the federal government should commission a cost–benefit analysis of the current level of funding for public speech pathology positions, to include:

- the impact on individuals of existing waiting lists;
- the limited provision of speech pathologists in the education, aged care and youth justice settings
- the impact on individuals where services are not available
- the impact of limited clinical placements and job opportunities for the speech pathology profession
- the impact on the Australian community of underfunding these services.

The committee also suggested that the government should consider the costs to the individual and to society of failing to intervene in a timely and effective way to address speech and language disorders in Australia and address these issues in the development of relevant policies and programmes.

And finally, it proposed that the federal government should work with state and territory governments and stakeholders to ensure that parents and carers have access to information about the significance of speech and language disorders and the services that they can access to address them.

The US National Academy of Sciences Report: Concerns about the way that services are provided to children with SLCN and their funding have also been the subject of a recent report from the American Speech and Hearing Association.[104] Its comprehensive report drew a series of conclusions. Children with severe speech and language disorders have an increased risk of a variety of adverse outcomes, including mental health and behaviour disorders, learning disabilities,

103 Commonwealth of Australia (2014). *Prevalence of different types of speech, language and communication disorders and speech pathology services in Australia*. Senate Community Affairs References Committee. http://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Community_Affairs/Speech_Pathology/Report

104 Rosenbaum, S., and Simon, P. (eds) (2016). *Speech and Language Disorders in Children – Implications for the Social Security Administration's Supplemental Security Income Program*. US National Academy of Sciences, Engineering, and Medicine. https://www.ncbi.nlm.nih.gov/books/NBK356274/

poor academic achievement, and limited employment and social participation. Twenty-one per cent of all special education eligibility in the United States is for speech and language disorders —three times greater than eligibility for autism or intellectual disability. Speech and language disorders are prevalent, affecting between 3 and 16% of US children. Prevalence estimates vary according to age and the diagnostic criteria employed, but best evidence suggests that approximately 2% of children have speech and language disorders that are severe according to clinical standards. Children of families with low incomes are more likely than the general population to have disabilities, including speech and language disorders. The evidence shows an increase in the prevalence of speech and language disorders over the past decade in the US child population. Children with mild to moderate speech and language disorders will benefit from a variety of treatments. For children with severe speech and language disorders, treatment improves function; with few exceptions, however, substantial functional limitations will persist. The total number of children receiving Supplemental Security Income for speech and language disorders more than tripled in the last decade.

Appendix 4: The SEN landscape in England

Recent years have seen substantial change in the national landscape of legislation for special educational needs (SEN). The Children and Families Act 2014 introduced new regulations for children and families: 'An Act to make provision about children, families, and people with special educational needs or disabilities; to make provision about the right to request flexible working; and for connected purposes.'[105] The new code of practice states that 'a child or young person has SEN if they have a learning difficulty or disability which calls for special educational provision to be made for him or her.' Learning difficulty or disability is considered to be when a child has significantly greater difficulty in learning than the majority of others of the same age, or has a disability which prevents them from using facilities in mainstream education settings. Clearly many children with language and communication needs will be affected by these reforms, but the emphasis is on both early identification of difficulties and the long-term consequences of differences for all children, especially those from more disadvantaged backgrounds. Of specific interest is the need to take into consideration the child's views in the process, but of course eliciting those views is likely to be a challenge if the children have difficulties expressing themselves.

Beyond this the introduction of the new SEND code of practice has implications for speech, language and communication needs whereby speech and language therapy will almost always be a special educational provision, where it 'educates or trains' a child.[106] The current percentage of pupils with speech, language and communication needs who have an EHC plan is reported as 14%, which is the second-highest primary type of need for SEN support behind autism spectrum disorder.[107]

Education, health and care plans

An education, health and care plan (EHC plan) is in place for children and young people aged up to 25 years who need more support than is available through special educational needs support. Issued by local authorities, an EHC plan identifies a child or young person's additional educational, health and social needs, and outlines support to meet these needs. Of children receiving SEN support, 20.9% have speech, language and communication needs.[108] SLCN is the second-highest primary type of SEN behind moderate learning difficulty for children receiving SEN support.

With the introduction of the Children and Families Act 2014, EHC plans replace the previous Statement of Special Educational Needs and Learning Difficulty Assessment (LDAs). Advantages of EHC plans over Statement of SEN are that the EHC plan is a single document that covers all areas of need, including health issues as well as educational needs. In addition, where statements were available

105 Children and Families Act 2014. http://www.legislation.gov.uk/ukpga/2014/6/contents/enacted

106 Gascoigne, M. (2014). *Implementing the SEND code of practice (0-25). Implications for SLCN*. Better Communication CIC. http://www.bettercommunication.org.uk/impact%20of%20the%20SEND%20reforms%20on%20SLCN.pdf

107 Department for Education. (2015). *Special educational needs: an analysis and summary of data sources*. https://www.gov.uk/government/publications/sen-analysis-and-summary-of-data-sources

108 Department for Education. (2015). *Special educational needs: an analysis and summary of data sources*. https://www.gov.uk/government/publications/sen-analysis-and-summary-of-data-sources

for children and young people up to the age of 19, EHC plans extend support until age 25. Currently we are in a phase of transition, whereby statements are being transferred to EHC plans, a process which will take place until April 2018 (statements still apply until an EHC plan is issued). The process from a local authority being made aware of a child or young person in need of assessment, to the final EHC plan being issued, is to take no longer than 20 weeks under statutory timescale. The assessment for EHC plans is in line with the focus on joint commissioning of services as outlined in the Children and Families Act 2014, involving a statutory assessment process that is coordinated across education, health and care. Also in line with the new guidelines, it is important that an EHC plan reflects the views, interests and aspirations of children, young people and their parents. Therefore, the EHC process allows for disagreement over decisions to be voiced by children, young people and their parents, and for these to be addressed before a final plan is issued.

The local offer

Under new statutory legislation local authorities are required to publish a 'local offer' – a comprehensive document which outlines provision expected to be available from education, health and social care services in the area for children and young people who have SEN or a disability, with or without an EHC plan. As stated in the SEND code of practice (section 4.2) the local offer has two key purposes:

- to provide clear, comprehensive, accessible and up-to-date information about the available provision and how to access it
- to make provision more responsive to local needs and aspirations by directly involving disabled children and those with SEN and their parents, and disabled young people and those with SEN, and service providers in its development and review.

The services set out in the local offer reflect the joint strategic needs assessment (JSNA),[109] which is the means by which the Health and Wellbeing Board understands and agrees the needs of the local community. The JSNA takes into account the needs of all people in the community as a whole as well as the needs of vulnerable groups including those with SEN or disability. Local authorities and care commissioning groups apply the JSNA to the joint commissioning of services for children and young people aged 0–25 years, which then informs the local offer. The local offer is then used to create EHC plans at the individual level. Figure A1 displays this relationship between the JSNA and EHC plans.

Development of a local offer involves collaboration between the local authority, children, young people and parents (from a broadly representative group of needs and disabilities), who are each involved in planning its content, commenting and reviewing and publication. Schools, colleges, health services and others must also be involved in the development and review of the local offer in order to provide a 'comprehensive, transparent and accessible picture of the range of services available'.[110] This collaborative process of development also aids provision of services after publication. The SEND code of practice provides local authorities with guidance about what must be included in a local offer, such as information about special educational, health and social care provision for children and young people

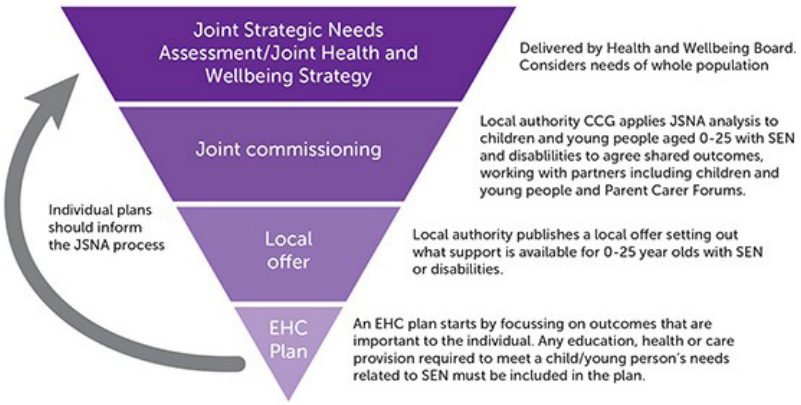
109 Department of Health (2007). *Joint strategic needs assessments*. http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/dh_081097

110 Department for Education (2015). *Special educational needs and disability code of practice: 0 to 25 years*. https://www.gov.uk/government/publications/send-code-of-practice-0-to-25

with SEN or disabilities, details of how to request an assessment for an EHC plan, and arrangements for identifying and assessing children and young people's SEN. A local offer must also include information about education and training provision, including the early years, as well as information about the provision of services from health professionals such as speech and language therapy. The information in a local offer also sets out available provision for adolescents and young adults, such as support to prepare for adulthood and available apprenticeships.

FIGURE A1

THE RELATIONSHIP BETWEEN JSNA AND EHC PLANS



School Action (Plus) and SEN Support

With the implementation of the SEND code of practice (2014), provisions in mainstream schools for children failing to make adequate progress previously known as School Action (SA) and School Action Plus (SA+), have been replaced by SEN Support. SEN Support in schools relies upon teachers and special educational needs coordinators (SENCO) gathering data about a pupil's progress alongside national data and expectations of progress, as well as the use of formative assessment. It is the responsibility of the school to ensure all teachers are knowledgeable in their understanding of strategies to identify and support pupils in need. In line with the Children and Families Act guidance, development of SEN Support involves identification of key outcomes for a child or young person, as well as discussions with them and their parents about their strengths and difficulties. It is then decided whether a school's core offer meets the child or young person's needs, or whether further support is necessary; this may be in the form of an EHC plan or external support services.

Pupil premium and the early years pupil premium

The coalition government introduced pupil premium in 2011. Pupil premium is additional funding for publicly funded schools in England which is provided in order to raise the attainment of disadvantaged pupils, and close the attainment gap between them and their peers. From 1 September 2016, schools have been required to publish their strategy for the use of pupil premium money on their website. The progress and attainment of pupils who attract pupil premium is reported on by Ofsted inspections and in school performance tables.[111]

111 Department for Education (2016). *Pupil premium: funding and accountability for schools*. https://www.gov.uk/guidance/pupil-premium-information-for-schools-and-alternative-provision-settings

The key is that this funding is tailored to the needs of the most disadvantaged children – children's language development is likely to be an issue for many of these children, therefore there is a good case for it to be used to this effect; in many schools this is the case, but there remains considerable variation in how the pupil premium funds are used.[112] A recent government consultation concluded that speech and language support was believed to be an essential part of any support programme for disadvantaged children especially in the early years.[113]

112 Carpenter, C., Papps, I., Bragg, J., Dyson, A., Harris, D., Kerr, K., Todd, L., and Laing, K. (2013). *Evaluation of Pupil Premium Research Report*. Department for Education. http://dera.ioe.ac.uk/18010/1/DFE-RR282.pdf

113 Department for Education. (2014). *Early years pupil premium and funding for 2-year-olds: Government response*. https://www.gov.uk/government/consultations/early-years-pupil-premium-and-funding-for-2-year-olds