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Literacy in the Mainstream Inner City School: Its relationship to spoken Language.

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Abstract

This study describes the language and literacy skills of 11 year olds living in an area of social and economic disadvantage attending a mainstream school. The proportion of these young people experiencing difficulties in decoding and reading comprehension was identified and the relationship between oral language skills and reading comprehension explored. The study included 36 individuals who were recruited from a mainstream secondary school, they were representative of the year group as a whole. Detailed oral language and literacy assessments were carried out and information about school attainment and special educational needs were obtained. Participants had significantly lower mean language and literacy scores than published test norms on all measures except story telling. Twenty one (58%) participants were identified as having reading comprehension difficulties, 10 of whom also had difficulties with decoding. Participants with reading comprehension difficulties had significantly lower oral language skills. A significant proportion of this group experience difficulties in literacy with associated oral language deficits. The nature of the relationship between language and literacy skills, issues of identification and intervention are discussed.

Key Words: Adolescents, Disadvantage, Language, Literacy

Literature Review

Oral Language, Literacy and Disadvantage

In recent years, policy in the UK has increasingly focussed on improving the life chances of children living in areas of social and economic disadvantage (HM Treasury 2004). One of the key targets for children in the early years has focused on developing their language and communication skills. Research literature has identified that this is a key aspect of developmental disadvantage for young children growing up in poverty and from low socio economic backgrounds (Locke, Ginsborg and Peers, 2002, Hart and Risley, 1995, Whitehurst and Fischel, 2000). However, as children become older, the focus of policy and research shifts away from oral language towards school outcomes such as literacy skills and attainment in national testing programmes. Less is known about the language skills of older children from disadvantaged backgrounds compared to their more advantaged peers. However research into younger groups might give some indication of later skills. For example, Fazio, Naremore and Connell (1996) followed a group of kindergarten children growing up in poverty for three years. They found that the language skills of the group of children identified as having language impairments at age five and six had improved significantly at follow up three years later. They suggested that during their three years of schooling, the children had '*acculturated to the academic environment and its demands*' (p 620) which was then reflected in their assessment scores. These findings suggest that older children from disadvantaged backgrounds may not experience the same difficulties that are seen in younger children, as schooling may redress the disadvantages such children experience when faced with formal tests of language and cognition. Nevertheless research has shown that children

from disadvantaged backgrounds often have poorer educational outcomes than their advantaged peers (Connolly, 2006, McNiece and Jolliffe 1998, McNiece, Bidgood and Soan 2004).

Relationships between Oral Language and Literacy

Reading can be viewed as having two key components; decoding of print and comprehension of what has been read. Hoover and Gough (1990) described the relationship between these components of reading and oral language in their ‘simple view of reading’ whereby reading comprehension is dependent on decoding of print and oral language skills. Decoding of print has consistently been found to relate to phonological skills both in typically developing populations and in those with developmental reading impairments (Snowling and Hulme 2006). While decoding skills are viewed as prerequisite for reading comprehension, it is broader oral language skills that enable comprehension of what has been read once it has been decoded.

The nature of the relationship between oral language skills and reading comprehension has also been explored through the identification of a group of children who demonstrate decoding skills that are within normal limits but who have limited reading comprehension skills. These children have been described as ‘poor comprehenders’ (Nation 2005). Studies have estimated that between 10 and 15% of children fit this profile of ‘poor comprehender’. Research into this group has found difficulties across a range of language domains; semantic skills, morphosyntax (Nation et al, 2004) and discourse level skills such as inference and production of narratives (Cain 2003, Oakhill 1984) however

these individuals have unimpaired phonological skills (Nation et al 2004). There is also some evidence that ‘poor comprehenders’ have working memory deficits which may be related to language skills in this group, as well as in children with SLI (Nation et al,1999; Bavin et al ,2006, respectively). However different models of working memory exist and the precise reasons for which these memory deficits may associate with language and literacy is not clear or equivocal in the literature.

‘Poor Comprehenders’ are often not identified in clinical populations of children with reading impairments, probably due to their fluent and efficient decoding skills. However, there has been some discussion as to whether this group represent a population of children with hidden language impairments similar to those seen in Specific Language Impairment (Nation et al 2004).

Although cross sectional studies of ‘poor comprehenders’ have demonstrated that a wide range of language skills are related to reading comprehension, caution must be exercised when inferring a causal relationship within such data. Longitudinal studies of the development of reading skills have shown that different language skills are correlated with and are predictive of different literacy skills across the age range (Scarborough 2005). Stouch and Whitehurst (2002) examined the relationship between oral language skills and literacy skills in a longitudinal study of children from four to ten years from disadvantaged backgrounds in the US. They found that in grades one and two there was no significant relationship between reading ability and oral language skills. However what they described as ‘code related skills’ were strongly related to reading attainment.

Code related skills included phonological output skills, alphabetic knowledge and print awareness. At these ages reading comprehension was strongly related to decoding skills. However in grades three and four decoding and comprehension skills could be separated and oral language skills (in addition to decoding skills) exerted an influence on reading comprehension. A study carried out by the NICHD Early Child Care Network (2005) found that the relationship between language and literacy skills through early childhood was differentially influenced by the child's socio economic status (SES). Firstly the children from low SES groups showed a stronger relationship between decoding skills in the first grade and reading ability in the third grade than the middle and high SES groups. Secondly, children from middle and low SES homes showed a stronger relationship between language skills at three years and their language levels at 4;6 years than their high SES group.

The studies reported above have looked at children up to the ages of nine and ten and explored the strength of relationship between different skills at different ages, focussing on how different language skills determine literacy skills. They imply that the relationship between oral language and literacy skills is bidirectional, particularly in older children where written language sources increasingly provide the input for language learning (Nippold 1998).

The relationship between language and reading skills can also be explored by looking at populations of children who have been identified as having language difficulties in early childhood. Catts, et al (2002) found that 48% of their community derived sample of

children with language impairments identified at five and six years of age had literacy difficulties when followed up at nine and ten years of age. The reported incidence of literacy difficulties in children with language difficulties is even greater when clinically identified samples are considered. Stothard et al (1998) found that 70% of their participants identified as having language difficulties at 5;6 years of age still demonstrated language problems when followed up at 15 years of age and of these 93% also had literacy difficulties. Conti-Ramsden et al (2001) found that 69% of children with specific language impairment (SLI) at age eleven fell below one standard deviation of the mean on a test of single word reading and 78% fell below that level on a test of reading comprehension. They also looked at a group of children who had fallen in the SLI category at age seven because they showed normal range non-verbal IQ scores in the context of poor language. However, by the time they had reached eleven, about half of the group were scoring at below two standard deviations from the mean on a test of non verbal IQ. In their group of children 77% fell below one standard deviation on a test of single word reading and 98% of them fell below this level for reading comprehension at 11 years of age.

In conclusion it is known that some children growing up in areas of social and economic disadvantage have poorer language skills than their more advantaged peers in the pre school period, they also have poorer educational outcomes. However, what is not clear is to what extent these earlier language deficits persist and how they might interact with educational outcomes. In particular, what impact on the development of literacy skills

might occur, given the crucial role that oral language skills play in the development of literacy, both in typically developing populations and those with difficulties.

The Current Study

The current study focussed on young people aged eleven who were living in an area of social and economic disadvantage and attending a mainstream secondary school.

1) The first aim of the study was to describe the language and literacy skills of this group compared to published normative data. We predicted, given the evidence about the language skills of pre school children growing up in disadvantaged backgrounds, that the language skills of this group of older children would also be lower than those found in nationally representative samples and that their literacy skills would be similarly depressed.

2) The second aim was to find what proportion of these children have poor reading skills. We would predict that in this group there would be a higher proportion of children experiencing literacy difficulties than would be found in a nationally representative sample. We also aimed to document which aspects of reading were affected in this sample as a whole – decoding and/or comprehension

3) The third aim was to explore the profiles of the group when divided into reading subgroups based on profile of text comprehension and decoding skill: Those with generally poor reading; ‘Poor comprehenders’ (who had adequate decoding skills but

below average text comprehension scores) ; and competent readers whose reading scores were both within 1sd of the mean for age.

4) The final aim of the study was to examine whether participants with reading difficulties had been identified by their school or their parents as having reading difficulties and / or language difficulties. This was an important clinical aim of the study as reporting mismatches in need and provision may help to pinpoint assessments that are more sensitive to difficulty than those currently used in schools. It may also raise awareness of the different types of language and literacy difficulties experienced.

Method

Participants

The participants were recruited from year seven students in an inner city mainstream secondary school. The school serves a deprived population with 59% of the year group in receipt of free school meals compared to a national average of 14% and an inner London average of 30%. All students from year seven, except those who had been learning English for less than six years, were invited to take part in the study. The total year group was 107 with nine students who had been learning English for less than six years, so 98 students were invited to take part in the study. In total, 36 students and their parents completed and returned the consent forms and therefore participated in the study. The students who consented to take part in the study did not differ significantly from those who did not consent in terms of percentage of free school meals or school measures of ability.

Of the 36 participants 19 (53%) were male and 17 (47%) were female. The age of participants ranged from 11;2 to 12;2, with a mean age of 11;8. Twenty two (61%) of the participants were in receipt of free school meals. 32 (89%) of the participants were monolingual English speakers and the remaining 4 students had been learning English since beginning formal schooling at 5 years of age.

Materials

Language Measures.

Three standardised tests of oral language were administered to the participants, selected to focus on both receptive and expressive language skills. All tests were administered according to standardised test procedures as described in the manuals. Assessments were administered according to their manuals and the order of administration was randomised.

The British Picture Vocabulary Scales–Second Edition (Dunn et al 1997) is a test of receptive vocabulary where participants are required to point to a picture from an array of four following a spoken single word prompt. Standard scores are calculated with a mean of 100 and a standard deviation of 15.

The Test of Reception of Grammar –Version 2 (Bishop, 2003) is a test of comprehension of English grammar including inflections, function words, and word order. Participants are required to point to a picture from a choice of four that corresponds to a spoken sentence. Standard scores are calculated with a mean of 100 and a standard deviation of 15.

The Expression, Reception and Recall of Narrative Instrument (Bishop 2004) is a test of Narrative skills. Participant are required to look at a series of 15 colour pictures which show a story, and then tell the story, first with the pictures in sight and then again up to 30 minutes later with the pictures out of sight. Stories were audio-taped for later

transcription. The participants are also required to answer a series of comprehension questions about the story. Three of these comprehension questions require responses based on literal information presented in the text whereas six require the participants to make inferences about information presented in the story. The test derives four scores:

- One for the initial telling of the story which counts how many episodes the child includes in their story;
- A further score for their recall of their story, again based on the episodes that were included;
- There is also a score for their comprehension of the story based on responses to the questions;
- and finally a Mean Length of Utterance (MLU) score is obtained. All scores are standards scores with a mean of 100 and a standard deviation of 15.

The ERRNI assessment was audio recorded and narrative samples were transcribed at a later date.

Reading Measures.

The Wechsler Objective Reading Dimensions (Rust, Golombok and Trickey 1993) was used to measure reading skills. This assessment comprises three scales; Basic Reading, Spelling and Reading Comprehension. Basic Reading is a measure of single word decoding where the participants are required to read aloud single words. In the spelling subtest participants are required to write down words spoken aloud by the examiner. In the reading comprehension scale participants are required to read a sentence or passage of

text and then orally answer questions about the text which are spoken by the examiner. All scores are calculated as standard scores with a mean of 100 and a standard deviation of 15.

Memory measures

The digit span sub test of the WISC-III^{UK} (Wechsler, Golombok and Rust, 1992) was administered. This test consists of a series of orally presented number sequences from two to nine digits. The participant is required to repeat these digits back to the examiner verbatim for digits forwards and then in reverse order for digits backwards. Raw scores for the sub test are converted to a scaled score with a mean of ten and a standard deviation of three. The digit span task is a measure of working memory.

Background Information.

Information was collected from the school regarding the participant's status on the school special educational needs register.

A parent interview was carried out in which parents were asked whether they had any concerns about their child's language or literacy skills and general progress in school and whether their child had ever been seen by or referred to a Speech and Language Therapist. In total 23 parents attended for interview. The interview can be found in the Appendix.

Procedure

Consent for the study to take place in the school was sought from the head teacher of the school and ethical permission was obtained from City University research ethics committee.

All students in year seven were told about the aims of the study and what it would involve from them. Students who expressed an interest in taking part in the study were then given an information pack to take home to their parent / carer. Parents / carer then returned the consent form to school where it was collected by the researcher.

Assessment took place in a quiet room within the school and was carried out by a qualified speech and language therapist. The assessments were carried out individually over two one hour sessions that took place on separate days. Before assessment took place the aims of the study and procedure were once again explained to the participants and they were given a further opportunity to ask questions or decline to participate in the study, no participants withdrew at this stage.

Following assessment, parents of all children were contacted and offered a meeting with the first author to feedback assessment results and to complete the parent interview questions. Where parents were unable to attend the school efforts were made to carry out the parent interview via telephone.

With parental consent all assessment results were also passed on to the school's transition co coordinator and speech and language therapist.

A 1SD threshold was chosen to indicate concerning scores. This threshold was chosen because it indicates that language and reading scores are in the lowest 16% for age.

Although more stringent cut-offs are sometimes used for diagnostic purposes at younger ages, relatively little is known about the fluctuation in these scores over time, or what severity of impairment leads to functional difficulty at school. It is worth noting here that scores lower than 1sd in this population may represent cultural differences rather than impairment. However, we felt that a score 1sd or below would plausibly represent a disadvantage for academic achievement which was the focus of this paper.

Results

1) What are the group scores for language and literacy skills compared to published UK norms?

The group results of the language and literacy assessments are shown in table one below. One sample t tests were carried out and all group means except for the ERRNI story telling recall fell significantly below the standardised test mean score of 100 (scaled score of 10 for the digit span test). However only the WORD reading comprehension mean fell below 1SD for age.

Cohen's d was calculated to examine the magnitude of the difference between the current sample and the test standardization sample. It can be seen that the largest difference is in

reading comprehension where the group mean is 81.4 and $d = -1.313$. Other measures where a moderate to large difference (0.5 and above) between this sample and the tests' standardisation sample were found included the TROG, BPVS, and ERRNI MLU, with small differences (0.2 to 0.49) observed for the Digit Span, ERRNI initial story telling, ERRNI story telling comprehension, WORD basic reading and WORD Spelling.

Table 1 about here

2) How many individuals have below average reading skills and in which aspects of reading?

Participants who had scores below one standard deviation from the mean on the literacy measures were identified. A total of 21 participants, 58% of the sample, fell below one standard deviation from the mean on at least one measure of reading. Ten (28%) of participants had below average scores on the WORD basic reading subtest and 21 (58%) had below average scores on the reading comprehension subtest.

All of the participants who had scores outside of the normal range in basic reading also had poor reading comprehension, and these children would appear to be generally poor readers.

Eleven of the participants had low reading comprehension scores in the apparent absence of decoding difficulties. These participants fit the profile of 'poor comprehender' and will be considered later.

3) Generally poor reading skills, poor reading comprehension and competent readers

The group was divided into those participants who had different profiles: those with poor reading comprehension and additional decoding difficulties referred to here as ‘Generally Poor Readers’ (n=10) and those with below average reading comprehension who nevertheless had decoding scores within the normal range, referred to as ‘Poor Comprehenders’ (n=11) and those with neither comprehension nor decoding score below 1sd referred to as ‘Competent Readers’.

The degree of difficulty in reading comprehension differed significantly across the three groups (One way Anova $F(2,33) = 65.67$ $p=0.001$). It can be seen in table three that the ‘Generally Poor Readers’ had the most severe difficulties with reading comprehension. i.e their scores fell more than 2 SD below the mean. Bonferroni post hoc tests were carried out and it was found that all three groups differed significantly from each other (all groups $p=0.001$).

The groups were compared on their basic reading scores and although none of the ‘poor comprehenders’ had basic reading scores below one standard deviation from the mean, their basic reading scores did differ significantly from the competent readers. They had a lower mean score, a reduced spread of scores and lower maximum scores.

Unsurprisingly the generally poor readers had the lowest basic reading scores (all falling below -1SD). The difference between the three groups was examined using a one way ANOVA and found to be significant ($F(2,33) = 73.29$ $p=0.001$). Bonferroni post hoc

tests revealed that all three groups differed significantly from each other ('Competent Readers' –Generally Poor Readers' $p=0.001$, 'Competent Readers-Poor comprehenders' $p=0.003$, 'Poor Comprehenders' - 'Generally Poor Readers' $p=0.001$).

The three groups were also compared on their spelling scores and a similar pattern was found with the generally poor readers having the lowest mean scores, the poor comprehenders having lower mean scores than the competent readers but their mean scores falling within the normal range. A one way ANOVA was carried out to investigate this and found to be significant ($F(2,33) = 48.89$ $p=0.001$). Post Hoc testing was carried out and all groups were found to differ significantly ($p=0.001$).

[Table two about here]

A one way Anova was carried out and significant differences were found between the three groups on the BPVS ($F(2,33) = 7.99$ $p=0.001$), ERRNI MLU ($F(2,33) = 5.26$ $p=0.01$) and Digit Span ($F(2,33) = 6.73$ $p= 0.004$). No significant difference was found between the three groups on the TROG ($F(2,33) = 2.49$ $p = 0.098$).

Post Hoc Games Howell tests were carried out to further investigate how the groups differed from each other. For the BPVS and Digit Span there was a significant difference between the 'Competent Readers' and the 'Poor Comprehenders' (both $p < 0.01$) and between the 'Competent Readers' and the 'Generally Poor Readers' (both $p < 0.005$) but no significant differences between the two groups with reading difficulties (both $p > 0.8$).

However, for the ERNNI MLU a significant difference was found between the 'Competent Readers' and 'Poor Comprehenders' ($p=0.01$) but no other post-hoc differences were found.

4) Which Participants are identified by school or parent / carers as having reading or oral language difficulties?

In total 18 (50%) of the participants were identified by the school as having special educational needs. Seven (19%) participants were identified as receiving support at school action, seven (19%) as receiving support at school action plus and four (11%) had statements of special educational needs.

When these were examined by group, eight (80%) of the 'Generally Poor Readers' were identified by the school as having special educational needs where as only five (45%) of the 'Poor Comprehenders' were identified as having special educational needs.

Six of the parents of children with 'generally poor reading' were interviewed. Three of them had concerns about their child's speech and language and all of them had concerns about their child's literacy skills, however only one reported that their child had ever seen a speech and language therapist. Seven of the parents of 'poor comprehenders' were interviewed and none had concerns about their child's speech and language although one had previously seen a speech and language therapist. Three of them had concerns about their child's literacy.

Discussion

The findings of this study highlight that impoverished levels of literacy may exist for a significant minority of individuals in some UK mainstream schools even in the context of government attempts to target these skills in this population. Furthermore for the young people in this school, these difficulties appear to be related to underlying oral language abilities and have not been well identified by the school system.

The mean literacy scores of this group of 11 year olds were significantly below the test standardisation samples for decoding and spelling but the most striking difference was that seen in reading comprehension where the mean for this group fell over one standard deviation below the normative sample. Over a quarter (28%) of the participants had difficulties in decoding print and over half (58%) had difficulties in reading comprehension. Unsurprisingly all of those who had difficulties with decoding also had difficulties with reading comprehension making a total of 58% having difficulties in either reading comprehension or decoding and comprehension.

This high proportion of children experiencing difficulties in reading has significant implications for their ability to access the curriculum following their transition to secondary school. Teaching and learning in the secondary classroom tends to place a greater emphasis on written sources with students often expected to independently locate information from text, (Lewis and Wray, 2004). For this group of young people learning and understanding from text presents a real problem. Teachers may not be fully aware of these specific needs given the number of participants with reading comprehension

difficulties who were not identified by the school as having any special educational needs.

When the relationship between literacy difficulties and language skills was explored it was found that those participants who had difficulties with reading also had lower oral language skills. The difficulties seen in language related to grammatical aspects of language such as understanding of grammar, length of sentences and vocabulary. Verbal memory was also related to reading comprehension as found by previous authors (Nation et al 1999). Both those participants with only reading comprehension difficulties and those with additional decoding difficulties showed similar performance on the spoken language measures despite the fact that the group with additional decoding difficulties had greater difficulties with reading comprehension. The additional reading comprehension impairment can be interpreted using Hoover and Gough's (1990) 'simple view of reading' where reading comprehension is seen as the product of decoding and oral language skills. However it is of interest that this was not reflected in the severity of the language deficit. Tests of phonology however may have revealed more wide spread language impairments in the generally reading impaired group.

A study like the present one cannot speak to the *causal* relationship between the oral and spoken language difficulties seen in this group of individuals from disadvantaged backgrounds. However it is worth noting here that the direction of influence is uncertain and this uncertainty has implications for intervention to improve reading comprehension. Three possible mechanisms are outlined briefly below.

Oral Language Difficulties Cause Written Language Deficits:

The difficulties in reading comprehension could be viewed as a product of the generally poor spoken language skills found in this sample. Studies such as those by Locke et al (2002) and Hart and Risley (1995) have shown that children from disadvantaged backgrounds start school with poor oral language skills. Research has also shown that a range of language skills are important in the development of literacy skills (Snowling and Hulme 2006).

Written Language Skills Cause Oral Language Deficits:

Difficulties in oral language skills could be viewed as a product of difficulties in literacy. Young people who are frequent and competent readers are exposed to complex and varied vocabulary and grammar found in written contexts. This in turn enables them to develop and extend their spoken language skills (Nippold 1998).

Common Environmental or Genetic factors Impact on Development of Language and Literacy skills

It is known that environmental factors such as family interaction patterns can influence the development of early language skills (Rutter, Thorpe and Greenwood, 2003) for typically developing children. Hart and Risley (1995) found a strong association between social economic status and the amount of talking that went on in the home. It is also known that emergent literacy skills and an environment that supports the development of these skills lays the foundations of the development of later literacy skills (Storch and Whitehurst 2002). Moreover children from poorer backgrounds tend to have fewer

opportunities to interact with print at home, less experience with books and fewer literacy promoting activities than children from high income backgrounds (Snow 2002).

It is conceivable that the parents of these children experienced similar language and literacy difficulties and are therefore less well placed to support the development of their children's literacy and language skills at home.

Given the nature of the current study it is not possible to identify which one, if any of these causal mechanisms is at work in this population. However it seems plausible that many factors are at work for this group of young people. Identifying the specific causal mechanisms involved is worthy of continuing investigation in order to fully inform intervention.

At present, this complex interaction of factors makes selection of an appropriate intervention strategy to improve their reading skills, in particular reading comprehension, difficult.

Which Assessments and Interventions?

The young people in this study have been taught to read using the UK's national literacy strategy however this has not enabled them to develop spoken or written language skills representative of the wider population and as such has not met their learning needs. They have not been able to develop efficient spoken language or reading comprehension skills incidentally and appear to need even more explicit and individualised teaching in these areas than introduced in current government documentation. Moreover the current school

assessments have failed to identify a large group of children with both general and specific reading difficulties.

It should also be noted that those participants who had decoding skills within the normal range but had limited reading comprehension did have significantly lower mean decoding and spelling skills than the competent readers. This suggests that although on the measures carried out in this study they fit the profile of 'poor comprehender', a more complex relationship exists between language and literacy at this stage. The use of more demanding decoding tests in schools (such as the Graded Non Word Reading Test – ref needed) might reveal difficulties that are not identified using regular reading assessments such as the CATS class reading task and these should be taken into consideration when planning an intervention programme.

In the U.S. the National Reading Panel (National Institute of Child Health and Human Development, 2000) carried out a review of research into the teaching of reading comprehension. They found that there were several approaches to reading comprehension which were well supported by research literature. These were divided into two broad categories; vocabulary instruction and text comprehension. It would appear that both approaches would be highly suited to this group of young people with reading comprehension and language difficulties as the data show difficulties in both. However there is some evidence to suggest that children with impaired vocabulary skills may be less able to make use of some of the strategies for reading comprehension

suggested in this review such as deriving meaning from context (McKeown, et al (1985), Cain, Oakhill and Lemmon. (2004)).

Specific intervention could take several forms for this group. Given the associations here as well as previous studies, intervention could target oral language and memory skills for example vocabulary teaching methods suggested by the national reading panel report (list some and reference required here). Consideration should also be given to implementing intervention aimed at developing the home language and literacy environment such as has been trialled with younger children from disadvantaged backgrounds (Primavara 2000).

Conclusions

This is a small-scale study looking at a sample of children from one inner city UK secondary school. It is difficult to make broad generalisations about the literacy and language skills of children from similar schools however this study raised significant concerns about their progress in reading and oral language. Future research should focus on the extent to which difficulties of this kind are found in children from disadvantaged backgrounds starting secondary school using a larger sample over time. The relationship between oral language, literacy and attainment in national tests and which intervention strategies are most effective for this age group with the different profiles found here, are also worthy of further investigation. Finally, it would be helpful to study a similar sample in comparison to a group of young people with similar cultural backgrounds, with independent validation of communication difficulties by a speech and language therapist.

This would help tease out to what extent assessments are picking up impairments as opposed to cultural differences in language and literacy.

Reading and language skills are both fundamental outcomes of the education system and as Rose points out in his independent review of the teaching of early reading; '*without the ability to communicate effectively in speech and through reading and writing children and young people are seriously disadvantaged for life*' (Rose 2006 p 14). Failure to recognise and address the difficulties that these young people experience only serves to perpetuate the cycle of disadvantage.

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Table 1: Language and Literacy Scores for all Participants on all Measures

Assessment	Mean Score	Standard Deviation	Minimum score	Maximum score	Range	one sample t test	Cohen's d
Digit Span	8.6	2.60	4	13	9	t=-3.268 p=0.002	-0.499
TROG	89.5	12.85	55	111	56	t=-4.888 p=0.001	-0.750
BPVS	89.5	11.52	63	111	48	t=-5.454 p=0.001	-0.783
ERRNI-Initial story telling	93.4	15.92	64	126	62	t=-2.471 p=0.019	-0.424
ERRNI -Recall story	95.1	14.71	64	126	62	t=-2.016 p=0.052	-0.332
ERRNI –MLU	91.0	9.52	72	114	42	t=-5.674 p=0.001	-0.716
ERRNI –Story Comprehension	92.5	15.79	64	119	55	t=-2.861 p=0.007	-0.489
WORD Basic Reading	91.5	14.39	64	113	49	t=-3.545 p=0.001	-0.578
WORD Spelling	93.7	16.65	67	126	59	t=-2.283 p=0.029	-0.400
WORD Reading Comprehension	81.4	13.24	49	103	54	t=-8.423 p=0.000	-1.313

Table 2: Language and Literacy scores for ‘Generally Poor Readers’, ‘Poor Comprehenders’ and ‘Competent Readers’.

	‘Competent Readers’ N=15			‘Poor Comprehender’ N11			‘Generally Poor Readers’ N10		
	Mean	SD	Min-Max	Mean	SD	Min-max	Mean	SD	Min-Max
WORD Basic Reading***	103.13	7.79	89-113	93.45	5.45	85-103	71.9	4.51	64-78
WORD Reading Comp	93.40	4.82	85-103	80.09	3.33	75-84	64.90	9.40	49-80
WORD Spelling***	108.33	10.19	92-126	91.82	7.76	82-102	73.7	6.60	67-88
Digit Span**	10.20	2.68	6-13	7.18	1.99	4-13	7.70	10	6-11
TROG	94.53	12.05	78-111	88.18	13.87	55-102	83.50	10.90	69-102
BPVS***	97.20	8.98	81-111	84.36	11.03	63-98	83.70	9.33	69-95
ERRNI-Initial story telling	99.33	9.88	78-121	88.73	18.74	65-126	89.80	18.55	64-121
ERRNI -Recall story	99.20	12.33	80-122	91.91	13.04	75-117	92.30	19.166	64-126
ERRNI – MLU*	96.27	10.07	80-114	85.73	7.95	72-97	88.90	6.26	82-99
ERRNI –Story Comprehension	97.73	12.16	65-113	84.27	18.52	64-113	93.60	15.12	64-119

*** p= 0.001, ** p=0.004, * p=0.01