

# **Developing the Literacy Skills of Children from Areas of Economic Disadvantage**

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## **Abstract**

This piece of work consists of three papers. The first paper is a systematic review of literature investigating the effectiveness of preschool, classroom-based literacy interventions used with children living in economic disadvantage. The review consists of nine studies, the majority of which found significant short term effects of intervention. Two of the studies reported long term outcomes which were found to be non-significant. Consequently, recommendations for further research included exploration of a wider range of factors in raising the literacy levels of children from economic disadvantage.

The second paper is a bridging document which explains how the various decisions in this piece of work were made, including the research focus, methodology, method and analysis. Through the bridging document, ontology, epistemology and reflexivity are explored and ethical and quality issues are discussed.

The third paper describes and discusses a piece of empirical research. Following on from recommendations in the systematic review, a wide range of factors which may be useful in enhancing the literacy levels of children from economic disadvantage were explored. A participatory model of research was used which involved training six pupils from a school situated in a deprived area to carry out research with their peers. The group produced a collaborative mind map and interviewed five of their peers. Six themes emerged from these methods: resources, strategies, skills, people, enjoyment and practice. The benefits and limitations of using a participatory research model are discussed. The data gathered was deemed to be useful but not necessarily better than that gathered using more traditional non-participatory methods. Implications and suggestions for further research are explored.

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## **What is known about the effectiveness of classroom-based literacy interventions for preschool children from poverty?**

*Children growing up in poverty experience less educational success than their wealthier counterparts. Improving literacy levels in this cohort of children is thought to be key to allowing them better access to the school curriculum and, therefore, greater inclusion in society. Based on the ideal of early intervention, this systematic review looks at the effectiveness of classroom-based literacy interventions used with preschool children from poverty. Nine empirical studies met pre-determined criteria and were included in the review. The majority of studies found significant short term effects of literacy interventions upon comparison with a control group. Effect sizes ranged from small to large. The studies were synthesised based on their content, duration and outcome measures and patterns were discussed, although heterogeneity between the studies made this difficult. Long term outcomes were reported for two of the studies but these did not show a significant effect on key literacy skills such as reading. Limitations of the review include the absence of inter-rater reliability in searching databases and coding the studies, and lack of random allocation in the majority of the studies. Recommendations for further research include the need for long term follow up and exploration of a wider range of factors in raising literacy levels in this population. Implications for the Educational Psychologist are discussed.*

### **Introduction**

#### **Poverty**

The Child Poverty Act 2010 sets out Government proposals to end child poverty by 2020, making this aim a clear national priority. Children growing up in poverty achieve less at school, experience poorer health and are more likely to end up in poorly paid jobs or unemployment in adulthood (Plewis & Kallis, 2008). It is widely believed that breaking the cycle of poverty is fundamental to helping improve the life chances of children (Department for Work and Pensions & Department for Education, 2011; Field, 2010; Goulden, 2010).

Poverty is difficult to define as 'no single measure captures every aspect of poverty' (Kennedy, 2010, p.4). The UK government uses low income as its measure of poverty and defines low income as a household income which is 60 per cent or less than the median British household income (Department for Education, 2011a). Such a definition is criticised for being too narrow as poverty can incorporate many factors including a lower quality of available services and deprivation of opportunity; for children it may imply the absence of adequate care from a parent (Bradbury, Jenkins, & Micklewright, 2001). Income is used, presumably, as it is more easily measured than other factors.

### ***The links between poverty and literacy***

Literacy is vital in allowing access to the school curriculum (Fisher, 2002) and in experiencing inclusion in society (Parsons & Bynner, 2002); therefore literacy is likely to be pivotal in helping to break the cycle of poverty. Poverty, however, is linked to underachievement in literacy. In 2010, only 64 per cent of children who received free school meals achieved a National Curriculum Level 4 in Literacy at the end of Key Stage 2 while 80 per cent of those not eligible for free school meals achieved this level (Department for Education, 2011b). In addition, as literacy is necessary to access the rest of the school curriculum, it can be assumed that low literacy levels will also affect curricular learning in many other areas as curriculum delivery is heavily reliant on literacy skills.

For a discussion of explanations of the links between poverty and literacy, see pages 42 to 43. Fischel et al. (2007) suggested that current literature mainly focuses on the links between poverty and literacy while there is a dearth of research into reducing the risks and improving the literacy outcomes of children raised in poverty.

### ***Early intervention***

There is a compelling argument for educators to provide early intervention in literacy to children from low income families; Stanovich (2000) argued that reading problems are easier to prevent than to fix. There is evidence that the literacy achievement gap widens as pupils progress through school. Denton and West (2002) reported that five year olds who come from low-income families scored half a standard deviation below the national average in reading



achievement. Alexander, Entwisle and Olsen (2001) suggested that by the end of primary school this gap had increased to two standard deviations.

Crowe, McDonald and Yaacov (2009) described how affecting change at a social and economic level is extremely complex. They suggested that school may be the best place to start as educators have direct control over classroom interventions. Programmes such as Head Start in the USA and Sure Start in the UK were developed with this in mind and assuming that early intervention is vital. Preschool interventions such as these have been found to be successful and to have had more impact than school age interventions on outcomes such as achievement (McCabe, Boccia, Bennett, Lyman, & Hagen, 2009).

### ***Literacy intervention in the preschool classroom***

Snow, Burns & Griffin (1998) suggested that children from poverty need 'excellent, enriched preschool environments' and / or 'schools that address their particular learning needs with highly effective and focused instruction' (p.16). In this way their potential for being at risk of reading difficulties in later life may be reduced. Justice, Chow, Capelline, Flanigan and Cotlon (2003) argued there is a need for direct, explicit literacy interventions for those children deemed to be at risk. They suggested there needs to be a formalised structure to aid these children's learning to make up for what they have potentially missed out on in their home lives. In addition, as it is widely acknowledged that children from poverty struggle to achieve age appropriate literacy levels through accessing the normal curriculum, intervention over and above the normal curriculum needs to take place. Direct interventions, however, may be at odds with current early years' philosophy which emphasises the role of child-initiated activity (Department for Children Schools and Families, 2008).

Paulson et. al. (2004) explained that, before starting school, children learn much about reading and that this prepares them for reading independently. This learning and preparation for reading is called emerging literacy. Snow et al. (1998) broke emerging literacy into three parts: oral language skills, awareness of the sounds and structure of language and exposure to and experience of print.

Within the possibility for classroom intervention, Snow et al. (1998) suggested shared book reading; activities based on print awareness and activities to strengthen phonological awareness. Print awareness is defined by Justice and Ezell (2001) as an understanding of the forms, conventions and functions of print, including understanding the directionality of print, being able to handle books properly and knowing the letters of the alphabet. Phonological awareness is defined by Snow et al. (1998) as a general appreciation of the sounds which compose words and the ability to manipulate those sounds, including awareness of syllables, onset and rime and individual phonemes. The link between phonological awareness and reading is well documented (e.g. Hulme, Snowling, Caravolas, & Carroll, 2005; Lonigan, 2006) as are the positive effects of phonological awareness interventions (National Research Panel, 2000; Rose, 2006). The relationship between print awareness and wider literacy skills is less well documented but there is a growing body of literature in this area (e.g. Hammill, 2004; Niessen, Strattman, & Scudder, 2011).

### ***The current review***

Fischel et al. (2007) suggested there is a paucity of research looking specifically at literacy interventions targeted at low-income children and especially those at preschool age. This review aims to consider how classroom-based literacy interventions can enhance the early literacy skills of preschool children from poverty.

The question to be considered in this review is: 'What is known about the effectiveness of classroom-based literacy interventions for preschool children from poverty?' For the purpose of this review, 'literacy interventions' will mean any activities used to strengthen literacy skills which are delivered over and above the standard curriculum. 'Children from poverty' will mean children identified by the studies' authors as living in economic disadvantage relative to the particular country in which the study was carried out. Whilst it is accepted that this is a rather narrow definition of poverty, it is necessary in the context of the current review.

## Method

Petticrew and Roberts' (2006) guidance for carrying out a systematic review was followed. They suggested seven stages:

1. Define the question that the review is trying to answer.
2. Determine the types of studies that are needed.
3. Complete a comprehensive literature search.
4. Examine the results of the search using inclusion and exclusion criteria.
5. Describe and evaluate the studies.
6. Synthesise the studies' findings.
7. Disseminate the findings.

The question being already defined in the introduction, the next step was to decide which types of study should be used. It was decided that quantitative studies would be used as they are considered to have greater internal validity compared to qualitative ones (Petticrew & Roberts, 2006). Moreover, Petticrew and Roberts (2006) listed a hierarchy of evidence to show which study designs are best for answering questions of 'effectiveness.' The hierarchy suggests that as the current question is one of 'effectiveness' studies such as randomised controlled trials are better than case studies.

The third step was to carry out a comprehensive literature search. The initial search was carried out using the Education Databases (ERIC, BREI and AUEI), Web of Knowledge and PsycInfo via Ovid. The search terms were derived from background reading of the topic and using the thesaurus in the ERIC database. The search terms can be found in Table 1, below.

Table 1 – Search Terms

Target Population 'Age' Terms	children / preschool* / prek* / nurser*
Target Population 'Poverty' Terms	poverty / low income / socio-economic / depriv* / low SES / disadvantage*
Intervention Terms	literacy

As well as searching the databases, citation searches were conducted once relevant articles were found. Hand searches were not deemed appropriate as

there are no key journals which combine literacy interventions with a ‘poverty’ population. The Theses Index was also searched in order to avoid a bias for published material.

The fourth step suggests that the results of the search are screened for relevance. At this stage, the screening was based on title and abstract only. In order to aid this screening, basic inclusion criteria were applied. These can be found in Table 2, below.

Table 2 – Inclusion Criteria

Participants	Preschool children (3 - 5 years). Children identified as living in economic disadvantage.
Settings	School, nursery or centre based. English speaking countries only.
Intervention	Any intervention aimed at improving the children’s literacy skills.
Design	Intervention / control group design; reporting short and / or long term effects.
Time	Studies conducted from 2000 onwards were included in order to allow for a large enough number of studies to be generated whilst ensuring time relevance.

The full texts of the articles which met the inclusion criteria were consulted and, in order to narrow the search down further, exclusion criteria were applied as detailed in Table 3, below.

Table 3 – Exclusion Criteria

Participants	Studies where more than 15% of participants were learning English as an additional language.
Settings	No further criteria set.
Intervention	Studies which did not describe direct intervention (e.g. some studies described teacher training programmes only).
Design	No further criteria set.
Time	No further criteria set.

Searches of the three databases and the Theses Index using the inclusion and exclusion criteria generated 12 articles.

Three of these articles report on the same study. One considered short term effects of an intervention (McIntosh, Crosbie, Holm, & Dodd, 2007) while the other two reported long term effects (Henning, McIntosh, Arnott, & Dodd, 2010; O’Connor, Arnott, McIntosh, & Dodd, 2009). For the purpose of this review, the results from the McIntosh et al. (2007) and O’Connor et al. (2009) articles are

combined as it was felt useful to understand the short and long term implications of the intervention. In addition, one article was removed due to poor quality (Justice et al., 2003), leaving nine studies in the in-depth review.

Step 5 suggests that each study should be described. A summary of each study can be found in Table 4 (pp.10 – 20). The information which was deemed relevant for the coding process is as follows:

- Participants – number of participants and age range.
- Setting – type (nursery, school or centre) and country.
- Measure of Poverty – information provided by the study regarding how the participants' 'poverty status' was determined.
- Intervention – content of the intervention, frequency and duration of intervention, who delivered the intervention and whether the intervention was delivered to individual children, small groups of children or the whole class.
- Design – information about participant allocation, whether the follow up was short or long term and attrition.
- Measures of Literacy – the tests used.
- Literacy Gains – all literacy gains are reported and those at  $p < 0.05$  are marked with an asterix.
- Effect Size – Cohen's  $d$  is stated, where 0.2 = small, 0.5 = medium and 0.8 = large (Cohen, 1992). In some cases Cohen's  $d$  had to be calculated.

Step 5 also suggests providing an assessment of the quality of the studies in the review, therefore, the nine studies were examined critically using the EPPI-Centre Weight of Evidence Tool (EPPI-Centre, 2001). This tool provides three criteria which can be used to establish each study's overall quality and relevance to the review's question, as follows:

A – The extent to which the study findings can be trusted in answering the study question(s) taking account of all quality assessment issues.

B – Appropriateness of research design and analysis for addressing the review's question.

C – Relevance of the primary focus of the study for addressing the question of the review.

D – An overall weighting, taking into account A, B and C.

Quality weightings for each study can be found in Table 5 (p.22).

Finally, the results of the studies were synthesised and discussed (step 6). The synthesis considers short term effects in terms of the content and intensity of the intervention as well as exploring the impact of intervention on individual outcome measures. The synthesis also explores long term effects.

## **Results**

A description of each of the seven studies can be found in Table 4 (pp. 10-20).

### ***General characteristics***

Six studies took place in the USA, two in the UK and one in Australia. The studies were conducted in schools or centres, with one based in a Head Start setting and one based within Sure Start. The number of participants in the studies ranged from 30 to 1177. The children's ages ranged between three and five years. Massetti (2009) did not provide participant ages, but because the setting was Head Start classrooms it can be assumed the children were between three and five years old.

The studies took their measures of poverty from different sources. Two of the studies based their measure on economic demographics of the local community (e.g. unemployment statistics) while four based it more directly on some measure of the children's family's income (e.g. percentage of children who were entitled to free lunch) and three studies gave information about both. Individual family income is a more precise measure than area demographics which may not truly represent the sample of children in the study.

The nature of the interventions varied in terms of frequency, duration, group size, instructor and content. Interventions ranged in frequency from those which were provided for 30 minutes per week to those which were embedded throughout the day. The shortest intervention lasted eight weeks and the longest a whole school year. All of the interventions were delivered to the whole

class, apart from that described by Justice and Ezell (2002) which was delivered to small groups of children. In two of the studies the interventions were delivered by a Speech and Language Therapist. In all others the interventions were delivered by the class teacher following training in the intervention.

Fischel et al. (2007) reported on the impact of two different interventions. Four of the authors described their interventions as being embedded throughout the curriculum while the other five studies described discrete intervention sessions. The content of the interventions varied considerably. In terms of emergent literacy, a focus on phonological awareness was described in eight of the interventions, print awareness was included in six, and four of the interventions included aspects of oral language.

### ***Experimental design***

Eight of the studies had a control group consisting of non-intervention children while Justice, Kaderavek, Fan, Sofka and Hunt (2009) drew their control group from another study. All studies measured short term gains and Nancollis, Lawrie and Dodd (2005) followed up the children in the long term, reassessing them two years later. O'Connor et al. (2009) followed up the children in the McIntosh et al. (2007) study two years later; the results of which are also included in Table 4 (pp.10-20).

Participant allocation varied greatly between studies. In four of the studies allocation was by classroom and in one of the studies it was by school. MacKay (2006) and Nancollis et al. (2005) used pre-intervention children as their controls with the subsequent intake of participants all being part of the intervention group. McIntosh et al. (2007) and Justice and Ezell (2002) achieved random allocation of participants where pupils were randomly assigned to classes or groups.

Table 4 – Description of Studies

Study	Participants		Setting	Measure of Poverty	Literacy Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Davidson et al. (2009)</b>	129	3-4	27 preschool classrooms in 17 schools (USA)	83% of participants qualified for free/reduced lunch; schools in 'high-poverty' area.	Ready Set Leap! Curriculum taught for 1-2 hours per day for 8 months approximately; individual technology based sessions, large group 'read aloud' (exposure to print) and small group phonological awareness and alphabet knowledge sessions; delivered by teachers.	Control group. Short term follow up.  Schools randomly assigned.	Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (Good & Kaminski, 2002); Woodcock-Johnson III (Woodcock, McGrew, Mather, & Schrank, 2001).	Blending Initial sound fluency Rhyming Passage comprehension Letter identification	0.35 0.21 0.19 0.09 0.19



Study	Participants		Setting	Measure of Poverty	Literacy Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Fischel et al. (2007)</b>	507	3-5	35 classrooms within 6 Head Start centres. (USA)	Children described as coming from 'low-income families.'	<u>Intervention 1:</u> 'Let's Begin with the Letter People' literacy curriculum incorporated into intervention classrooms for 8-10 months. Focus on language and phonological awareness. Delivered by teachers.	Two different literacy intervention conditions and a control condition.  Short term follow up.  Random assignment by classroom.	Get Ready to Read! Screen (RTR) (National Center for Learning Disabilities, 2000); Woodcock Johnson-Revised (Woodcock & Johnson, 1989); Family and Child Experiences Survey (FACES) (Administration on Children Youth and Families, 2003).	<u>Intervention 1:</u> Get Ready to Read! Screen* Alphabet knowledge Letter-word identification Dictation* Book knowledge* Print conventions* Comprehension	0.35  0.39  0.37 0.36 0.38 0.37 0

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Fischel et al. (2007)</b> (Ctd) Inter-vention 2	507	3-5	35 class-rooms within 6 Head Start centres. (USA)	Children described as coming from 'low-income families.'	<u>Intervention 2:</u> 'Waterford' curriculum incorporated into intervention classrooms for 8 – 10 months. 15 minutes per day computer-based approach focused on literacy activities to enhance print awareness, phonological awareness and language. Delivered by teachers.	Two different literacy intervention conditions and a control condition.  Short term follow up.  Random assignment by classroom.	Get Ready to Read! Screen (RTR) (National Center for Learning Disabilities, 2000); Woodcock Johnson-Revised (Woodcock & Johnson, 1989); Family and Child Experiences Survey (FACES) (Administration on Children Youth and Families, 2003).	<u>Intervention 2:</u> Get Ready to Read! Screen* Alphabet knowledge Letter-word identification Dictation Book knowledge Print conventions* Comprehension	0.24 0.17 0.21 0.20 -0.05 0.37 -0.12

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Justice and Ezell (2002)</b>	30	3-5	1 preschool centre (USA)	All children lived in households with incomes at or below the US federal poverty guidelines.	Print focused reading in small groups of 3-5; 8 weeks of 1-4 sessions (24 sessions in total); session length: 5-7 minutes; delivered by a SLT.	Control group. Random assignment to groups. Matched for age.  Short term follow up.	Print awareness assessments developed by authors, in some cases adapted from other tools.	Print concepts Print recognition* Words in print* Orientation / discrimination Alphabet knowledge* Literacy Terms Print awareness Composite*	0.28 1.81 1.20  0.87  0.48 0.48  1.08
<b>Justice et al. (2009)</b>	106	3-5	23 preschool classrooms (USA)	50% of children lived in households with annual incomes of \$5,000 to \$25,000. (Below \$22,211 is the USA definition of poverty.)	Whole class print-referencing book reading programme; 30 weeks; delivered by teachers.	Control group. Classrooms randomly assigned to intervention condition; children randomly selected from classrooms for analysis.  Short term follow up.	Phonological Awareness Literacy Screening (PALS) PreK (Invernizzi, Meier, & Sullivan, 2004); Preschool Word and Print Awareness assessment (PWPA) (Justice & H. Ezell, 2001).	Print concepts* Alphabet knowledge* Name writing-ability	0.50  0.56 0.42

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Justice et al. (2010)</b>	137	3-5	20 preschool classrooms (USA)	Centres prioritised children who were economically at risk; low household incomes in the county; one fifth of children in the study lived below the poverty line.	30 weeks, 2 x 25 min sessions per week of Read it Again! (RIA) supplement with focus on vocabulary, narrative, print knowledge and phonological awareness; delivered by teachers; whole class.	<p>'Comparison' group.</p> <p>18 teachers chose to take part; 11 of whom randomly chosen to be part of the experimental condition; the comparison group teachers were part of a different study. Children were randomly selected for assessment.</p> <p>Short term follow up.</p>	<p>Rhyming Individual Growth and Development Indicator (Early Childhood Research Institute on Measuring Growth and Development, 2000); PALS Pre-K (Invernizzi et al., 2004); PWPA (Justice &amp; Ezell, 2001).</p>	<p>Rhyme*</p> <p>Alliteration*</p> <p>Print concepts*</p> <p>Alphabet knowledge.</p>	<p>0.41</p> <p>0.30</p> <p>0.44</p> <p>0.05</p>

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Mackay (2006)</b>	1177	3-4	58 nurseries (UK)	The children in the study lived in areas of significant socio-economic disadvantage; over 50% of children lived in households defined as being 'in poverty.'	Multiple components embedded into the curriculum including: phonological awareness work, extra reading, support for those failing; enriched lit environment; interactive methods etc; one year; delivered by teachers.	Control group (consisting of pre-intervention children).  Short term follow up.	All tests were taken from a 'baseline assessment scheme' which included concepts of print, phonological awareness and early reading skills.	Concepts of print* Nursery rhymes* Initial letter sounds* Rhyme detection* Rhyme production* Alphabet	0.58 0.89 0.07 0.43 0.93 0.03

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Massetti (2009)</b>	116	Not given	10 Head-Start classrooms (USA)	Family income equal to or below the federal poverty index.	One of 20 activities based on emergent literacy skills used daily – whole class. Activities included phonological awareness, print awareness and emergent writing. Duration = 7 months approx. Delivered by teachers.	Control group. Matched pairs design based on classrooms. Classrooms randomly assigned.  Short term follow up.	Developing Skills Checklist (DSC) (McGraw-Hill, 1990); Get Ready to Read! Screen (GRTR) (National Center for Learning Disabilities, 2000).	<u>DSC</u> Phonological awareness*	2.05
								Print awareness*	1.86
								Emergent writing*	1.52
								<u>GRTR</u> Phonological awareness*	2.06
								Print awareness*	2.13
								Emergent writing	1.14

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>McIntosh et al. (2007)</b>	97	4-5	Preschool classrooms (Australia)	Low SES area based on census data.	10 weeks of classroom-based oral language and phonological awareness programme based on vocabulary from books, integrated throughout the day. Delivered by teacher; designed by SLT; whole class.	Control group. Random allocation to classes (control or intervention).  Short term follow up.	Primary and Preschool Inventory of Phonological Awareness (PIPA) (Dodd, Crosbie, McIntosh, Teitzel, & Ozanne, 2000).	Rhyme awareness* Phoneme isolation*	0.70 0.91

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>McIntosh et al. (2007)</b> (Ctd)  <b>O'Connor et al. (2009)</b> (same sample at 2 year follow up)	58	6-7	School classrooms (Australia)	Based on parental occupation, parental education and household income.	10 weeks of classroom-based oral language and phonological awareness programme based on vocabulary from books, integrated throughout the day. Delivered by teacher; designed by SLT; whole class.	Control group. 2 year follow up. 44% attrition from original sample.  Long term follow up.	Sutherland Phonological Awareness Test (SPAT) (Neilson, 2003); Modified Schonell Graded Spelling Test (Oerlemans & Dodd, 1993); Woodcock Reading Mastery Test – Revised (Woodcock & Johnson, 1989).	Phonological awareness Non-word spelling Spelling Reading comprehension	0.16 0.11 -0.27 -0.06



Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Nancollis et al. (2005)</b>	213	4-5	Sure Start Centres (UK)	Sure Start Centres in area of low SES based on Index of Local Deprivation.	Whole class phonological awareness programme; once a week for 9 weeks; sessions 45 minutes long; focus = onset rime awareness and syllables; delivered by SLT.	Control group (consisting of a different intake of children).  Short term follow up.	PIPA (Dodd et al., 2000).	Rhyme awareness*	0.42

Study	Participants		Setting	Measure of Poverty	Intervention	Design	Measures of Literacy	Literacy gains (*= significant effect, p<0.05)	Effect Size d
	N	Age							
<b>Nancollis et al. (2005)</b> (Ctd)  (same sample at 2 year follow up)	213	6-7	4 schools (UK)	Schools in area of low SES based on Index of Local Deprivation.	Whole class phonological awareness programme; once a week for 9 weeks; sessions 45 minutes long; focus = onset rime awareness and syllables; delivered by SLT.	Control group (consisting of a different intake of children).  Long term follow up.	PIPA (Dodd et al., 2000); Graded Word Spelling Test (Vernon, 1998); Queensland University Inventory of Literacy (Dodd, Holm, Oerlemans, & McCormick, 1998); Salford Reading Test (Bookbinder, 2000).	Rhyme awareness* Non-word spelling* Phoneme segmentation* Non word reading Spelling	0.90 0.60 -0.93 0.17 0.12

## **Results Continued**

### ***Weight of Evidence***

Each of the nine studies was judged for quality using the 'Weight of Evidence' tool (EPPI-Centre, 2001). A summary of this can be found in Table 5 (p.22). The studies are presented in order from highest quality to lowest, as defined by use of the tool.

The main issues which arose when considering Weight of Evidence A were fidelity of implementation and allocation of participants. In the majority of studies there were clear monitoring procedures in place to check that the intervention was delivered appropriately. McIntosh et al. (2007), however, did not outline such procedures and their study has therefore been given a weighting of medium. Massetti's (2009) study was given a weighting of medium as she does not explain clearly why the effect sizes in her paper are so large and she stated that the tests used had limited validity and reliability data. The study by Justice and Ezell (2002) was allocated a medium weighting because the tests they used had been piloted but not standardised.

In Weight of Evidence B, most studies were given a high rating as they used an appropriate research design including a control group. The study by Justice et al. (2010) was allocated a medium weighting due to the use of a 'comparison' group.

Weight of Evidence C relates to the primary focus of the review, which is the effectiveness of literacy interventions used with children from poverty. All studies focused on literacy interventions but they differed in how the participants' levels of poverty were gauged. The studies with lower weightings were those which considered only the average economic situation of the school's catchment area as opposed to the individual families.

Table 5: Weight of Evidence

	<b>A:</b> Taking account of all quality assessment issues, can the findings be trusted in answering the study's questions?	<b>B:</b> Appropriateness of research design and analysis for addressing the question of this systematic review.	<b>C:</b> Relevance of primary focus of the study for addressing the question of this systematic review.	<b>D:</b> Over all weight of evidence, taking into account A, B and C.
<b>Davidson et al. (2009)</b>	Medium	High	High	High / Medium
<b>Justice &amp; Ezell (2002)</b>	Medium	High	High	High / Medium
<b>Masseti (2009)</b>	Medium	High	High	Medium / High
<b>Fischel et al. (2007)</b>	Medium / High	High	Medium	Medium / High
<b>Justice et al. (2009)</b>	Medium / High	High	Medium	Medium / High
<b>MacKay (2006)</b>	Medium / High	High	Medium	Medium / High
<b>McIntosh et al. (2007)</b>	Medium	High	Medium	Medium / High
<b>Nancollis et al. (2005)</b>	Medium / High	High	Medium	Medium / High
<b>Justice et al. (2010)</b>	Medium / High	Medium	Medium	Medium

### ***Outcomes and effectiveness – short term***

All studies found short term gains on one or more measures of literacy following intervention. Many of the gains reached significance at the  $p < 0.05$  level except those in the study by Davidson, Fields and Yang (2009) who cited low implementation fidelity of intervention as a reason for their non-significant findings. They found a significant difference when the scores of children in classrooms rated as having high fidelity of implementation were compared with those in low-implementing classrooms.

Comparing the studies for effectiveness is problematic as they differ in their content, duration and outcome measures. Table 6 presents a synthesis of the studies based on the content of the intervention. For the purpose of the synthesis, the studies have been analysed based on which of the three emergent literacy skills have been focussed on in the intervention.

Table 6: Intervention Content

<b>How many emergent literacy skills?</b>	<b>Which emergent literacy skills?</b>	<b>Study</b>	<b>Significant Gains Made?</b>	<b>Effect Size (d)</b>
<b>1</b>	Phonological awareness.	Nancollis et al. (2005)	Yes – on 1 out of 1 measure.	0.42 (small)
		MacKay (2006)	Yes – on 5 out of 6 measures.	0.03 – 0.93 (none – large)
	Print awareness.	Justice & Ezell (2002)	Yes – on 4 out of 7 measures.	0.28 – 1.81 (small – large)
		Justice et al. (2009)	Yes – on 2 out of 3 measures.	0.42 – 0.56 (small – medium)
<b>2</b>	Phonological awareness and print awareness.	Davidson et al. (2009)	No.	0.09 – 0.35 (none – small)
		Masseti (2009)	Yes – on 5 out of 6 measures.	1.14 – 2.13 (large)
	Phonological awareness and oral language.	McIntosh et al. (2007)	Yes – on 2 out of 2 measures.	0.70 – 0.91 (large)
		Fischel et al. (2007) – Intervention 1	Yes on 4 out of 7 measures.	0.35 0.39 (small)
<b>3</b>	Phonological awareness, print awareness and oral language.	Fischel et al. (2007) – Intervention 2	Yes – on 2 out of 7 measures.	0.17 – 0.37 (none – small)
		Justice et al. (2010)	Yes – on 3 out of 4 measures.	0.05 – 0.44 (none – small)

Table 6 shows that the majority of studies found some degree of effect regardless of intervention content. Effect sizes ranged widely from no effect to large effects. It is surprising that the two studies which used an intervention incorporating all three elements of emergent literacy yielded only small effect sizes. Perhaps an intervention which mixes too many aspects of emergent literacy results in a loss of quality or focus. Correnti and Rowan (2007) argued that teachers are likely to have higher implementation fidelity when interventions focus on one specific activity with a clear objective.

Table 7 considers the duration of the interventions.

Table 7: Intervention Duration

<b>Intervention duration</b>	<b>Study</b>	<b>Session Length</b>	<b>Significant Gains Made?</b>	<b>Effect Size</b>
<b>1 – 3 months</b>	Justice & Ezell (2002)	5-7 minutes (24 sessions = 2 - 3 hours total)	Yes – on 4 out of 7 measures.	0.28 – 1.81 (small – large)
	Nancollis et al. (2005)	45 minutes per week (6.75 hours total)	Yes – on 1 out of 1 measure.	0.42 (small)
	McIntosh et al. (2007)	'Embedded'	Yes – on 2 out of 2 measures.	0.70 – 0.91 (large)
<b>6 – 7 months</b>	Justice et al. (2009)	Session length not given. (120 sessions)	Yes – on 2 out of 3 measures.	0.42 – 0.56 (small – medium)
	Justice et al. (2010)	20 – 30 minutes (60 sessions = 20 – 30 hours total)	Yes – on 3 out of 4 measures.	0.05 – 0.44 (none – small)
	Massetti (2009)	Session length not given.	Yes – on 5 out of 6 measures.	1.14 – 2.13 (large)
<b>8 – 10 months</b>	MacKay (2006)	'Embedded'	Yes – on 5 out of 6 measures.	0.03 – 0.93 (none – large)
	Davidson et al. (2009)	1-2 hours per day (exact duration of intervention not given.)	No.	0.09 – 0.35 (none – small)
	Fischel et al. (2007) – Intervention 1	'Embedded'	Yes on 4 out of 7 measures.	0.35 0.39 (small)
	Fischel et al. (2007) – Intervention 2	15 minutes per day (exact duration of intervention not given.)	Yes – on 2 out of 7 measures.	0.17 – 0.37 (none – small)

Table 7 shows that even the shortest interventions can lead to large effect sizes and three of the four longest interventions yielded no effect or only small effect sizes. This may be an important point for educators as it suggests that even a short intervention of one to three months duration can produce a large effect in terms of boosting the literacy skills of pre-schoolers from poverty.

Table 7 also shows that seven of the interventions were delivered in discrete sessions whilst three were described as being embedded throughout the day. Justice et al. (2009) suggested that teachers find it more difficult to implement interventions across a range of contexts.

Table 8 (p.26) examines the results based on the literacy outcome measures provided. These have been divided into those relating to phonological awareness, phonics and print awareness as these were found to be the most common measures.

The most common measure of phonological ability was rhyme awareness and was provided by five out of the nine studies. The effect size for the rhyme outcome ranged from 0.19 (small) in the study by Davidson et al. (2009) to 0.93 (large) in the study by MacKay (2006). It is strange that so many studies used this as a measure as research suggests that rhyme is not a strong predictor of later reading success (e.g. Blaiklock, 2004; Mann & Foy, 2003; Simpson & Everatt, 2005). Perhaps in some cases the researchers' aims were to assess whether or not the children had learnt what they were taught; many of the interventions included elements of rhyme. On the other hand, it may be that rhyme awareness was assessed out of convenience as it is part of many of the assessment tools used in the studies.

Table 8: Outcome Measure

<b>General Outcome</b>	<b>Specific Measure</b>	<b>Study</b>	<b>Significant Gains Made?</b>	<b>Effect Size</b>	
<b>Phonological Awareness</b>	Blending	Davidson et al. (2009)	No	0.35	
	Initial sound fluency / alliteration	Davidson et al. (2009)	No	0.21	
		Justice et al. (2010)	Yes	0.30	
		Mackay (2006)	Yes	0.07	
	Phoneme isolation	McIntosh et al. (2007)	Yes	0.91	
	Rhyme awareness	Davidson et al. (2009)	No	0.19	
		Justice et al. (2010)	Yes	0.41	
		McIntosh et al. (2007)	Yes	0.70	
		Mackay (2006)	Yes	0.43 / 0.93	
		Nancollis	Yes	0.42	
	Phonological Awareness	Masseti (2009)	Yes	2.05 / 2.06	
	<b>Phonics</b>	Letter identification	Davidson et al. (2009)	No	0.19
		Letter-word identification	Fischel et al. (2007) (Intervention 1)	No	0.37
Fischel et al. (2007) (Intervention 2)			No	0.21	
Alphabet		Justice & Ezell (2002)	Yes	0.48	
		Justice et al. (2009)	Yes	0.56	
		Justice et al. (2010)	No	0.05	
		MacKay (2006)	No	0.03	
<b>Print Awareness</b>	Book knowledge	Fischel et al. (2007) (Intervention 1)	Yes	0.38	
		Fischel et al. (2007) (Intervention 2)	No	-0.05	
	Print conventions / concepts	Fischel et al. (2007) (Intervention 1)	Yes	0.37	
		Fischel et al. (2007) (Intervention 2)	Yes	0.37	
		Justice & Ezell (2002)	No	0.28	
		Justice et al. (2009)	Yes	0.50	
		Justice et al. (2010)	Yes	0.44	
		Mackay (2006)	Yes	0.58	
	Print recognition	Justice & Ezell (2002)	Yes	1.81	
	Words in print	Justice & Ezell (2002)	Yes	1.20	
	Literacy terms	Justice & Ezell (2002)	No	0.48	
	Print awareness composite	Justice & Ezell (2002)	Yes	1.08	
		Masseti (2009)	Yes	1.86 / 2.13	



Interestingly, outcome measures related to phonics only reached significance in two out of the seven studies which measured this. As letter knowledge has been shown to be a strong predictor of later reading success (e.g. Blaiklock, 2004; Mann & Foy, 2003; Simpson & Everatt, 2005), this does not bode well for the children's literacy outcomes in the long term. In both of the studies which found a significant effect on a measure of phonics ability the intervention focus was print awareness. In the study by Justice & Ezell (2002) the intervention was delivered for eight weeks and the effect size was small (0.48) whereas in the study by Justice et al. (2009) the intervention was delivered for 30 weeks with a medium effect size (0.56). This suggests that a print awareness focus is effective in developing phonics skills and that a substantially longer intervention does not necessarily lead to a significant difference in effect size in the short term.

Caution must be used when considering effect sizes in terms of small, medium and large, however, as even a small effect size can translate to large differences in the classroom. Coe (2002) pointed out that even a small effect size of 0.2 translates to an increase from 50 per cent to 58 per cent of pupils gaining five or more A\* - C grades which is substantial in real terms. Therefore, even Davidson et al.'s (2009) non-significant gains with an effect size of 0.35 could translate into larger actual gains in practice.

### ***Outcomes and effectiveness – long term***

Two of the studies reported on outcomes two years after the interventions were delivered. O'Connor et al. (2009) reported long term outcomes from the study by McIntosh et al. (2007) and Nancollis et al. (2005) reported both short term and long term outcomes in their paper. The intervention in Nancollis et al's study was based purely on phonological awareness while McIntosh et al's combined phonological awareness with oral language work. The studies were of similar duration at 9 and 10 weeks respectively. No gains in reading were reported by Nancollis et al. comparing the intervention group with the control group two years after the intervention. Similarly, O'Connor et al. found no gain in phonological awareness skills, spelling or reading comprehension for the intervention group. O'Connor et al. reported a 44 per cent attrition rate which may have affected the result. The lack of long term effectiveness could be due

to the short duration of the interventions. Whilst short interventions seem to have had a short term impact, perhaps interventions need to be longer in duration if they are to have positive effects in the long term. In addition, neither intervention encompassed an element of print awareness, which the studies by Justice & Ezell (2002) and Justice et al. (2009) showed to have a significant impact on phonics ability.

Nancollis et al. (2005) found a significant difference between the control and intervention group for rhyme awareness and non-word spelling with a large (0.90) and medium (0.60) effect size respectively. Strangely, there was a significant difference for phoneme segmentation (-0.93 effect size) with the control group performing better than the intervention group. Nancollis et al. wondered if this was due to their intervention focusing on onset and rime skills rather than phoneme segmentation and blending. Nancollis et al. summarised that the intervention group learned what they were taught but that these skills did not transfer to other aspects of literacy. Again, perhaps this is due to a lack of print awareness within the intervention as it could be that combining phonological awareness with print awareness helps children to make links between the sounds of language and the written word.

## **Conclusions**

All studies showed some short term effects of literacy interventions on the literacy abilities of children from poverty, either through significance level or effect size, when compared to a control group. Davidson et al. (2009) cited low implementation fidelity as a reason for their non-significant findings which suggests that close monitoring of delivery is a crucial part of classroom-based interventions. In their study, two of the outcome measures revealed small effect sizes which may be substantial in real terms.

Analysis of the content of the interventions has suggested that the largest effects were yielded by those studies which focused on just one or two aspects of emergent literacy. Those which focused on all three produced only small effect sizes. Moreover, the shortest interventions resulted in the largest effect sizes which suggests that educators do not need to provide lengthy interventions to produce positive short term effects.

The studies differed in outcome measures which made it difficult to draw out patterns. Comparisons of alphabet knowledge did not reach significance in five out of seven studies which is unfortunate as letter knowledge is a strong predictor of success in literacy. In the two studies which did achieve significance in this area, the intervention focus was print awareness which suggests that print awareness is important in developing phonics skills.

There is a need for more information regarding the long term effects of intervention. Only two of the studies in this review were followed up in the long term and disappointingly these did not find that the interventions had a sustained impact on key literacy skills once the children were at school. Reasons for this were discussed as being the lack of print awareness in the interventions and also the short duration of the interventions.

It could be that children from disadvantaged backgrounds require on-going literacy support to eradicate the negative effects of their socio-economic situations. Cassen and Kingdon (2007) suggested the need for policy focused on holistic intervention beginning in the early years and continuing throughout school for those pupils at risk including those who are from economic disadvantage. Hirsch (2007) suggested that a focus on the school curriculum is insufficient for children from poverty and that all aspects of disadvantage must be addressed if the negative effects on education are to diminish.

### **Limitations**

The nine studies selected for the review differed greatly in the content and duration of their interventions and the outcome measures. This is thought to be due to the specificity of the participant inclusion criteria. The participants had to be preschool children who were deemed to be living in poverty and the majority of whom were not learning English as an additional language. This latter variable was considered to be extremely important as Snow et al. (1998) suggested that, as well as those living in economic disadvantage, non-native speakers of English are at most risk of reading failure. Tabors and Snow (2001) described the different pathways of literacy development experienced by children who are exposed to a second language. In addition, Fischel et al. (2007) found that low-income children who were learning English as an

additional language performed significantly poorer in literacy than low-income children whose first language was English.

This exclusion criterion produced a considerable problem when searching for studies as many had been carried out in the USA which has substantial ethnic diversity and, moreover, many studies did not include information about the languages spoken by the participants. Had this exclusion criterion been relaxed, there would have been more studies to consider which may have allowed tighter inclusion criteria around the content and duration of the interventions and their outcome measures.

Difficulty defining poverty was an additional issue with the participant inclusion criteria. A strictly defined measure of poverty was not applied as this would have further restricted the number of studies obtained.

An additional problem is that of accuracy. With only one person searching for and coding the articles, human error is unavoidable. Having more than one person working on this review would have helped to avoid this problem by increasing objectivity through inter-rater reliability. Various parts of the review are subjective, for example, the Weight of Evidence judgements and the structure of the synthesis.

Another issue is the bias towards published papers. Attempts were made to avoid this bias by searching the Theses Index, though, the only study found this way had gone on to become published (MacKay, 2006). Encouragingly, the papers did show mixed results which implies there was not too much bias towards the publication of only studies with significant findings.

A final limitation is that of lack of random allocation in the studies. Many of the authors discussed this problem in that random allocation is difficult to achieve in classroom environments. Even when random allocation is achieved, if this is allocation to classrooms, there could well be classroom factors as well as variables between teachers which may have influenced the results. Fischel et al. (2007) reported significant effects of classroom factors and found that the children in classrooms with more experienced teachers performed significantly better than children in classrooms with less experienced teachers. Similarly, Justice et al. (2010) wondered if the higher education of the teachers in the

intervention classrooms brought about the positive effects. This makes it difficult to be sure that the gains found were direct effects of the intervention.

### **Further Research**

It is recommended that further research should be carried out into what can be done to improve the literacy outcomes for children from disadvantaged backgrounds and long term follow up is paramount. This review has considered classroom-based interventions only, based on the rationale that educators can have direct control in this case. Perhaps this is too simplistic a stance to take as early family experiences and environment are important in both explaining and lessening the disparity in literacy achievement between children from different economic backgrounds (Bhattacharya, 2010; Ermisch, Francesconi, & Pevalin, 2001; Field, 2010). Therefore future work could consider family-based interventions or those which mix both school and family. As a cautionary note, however, adding more variables would make systematic analysis more difficult.

### **Implications for the Educational Psychologist**

The Educational Psychologist (EP) is well placed to raise awareness in schools of the need for literacy intervention with children from disadvantaged backgrounds. The findings of this review suggest that there is an evidence base to support the EP in recommending that educators should provide targeted literacy intervention over and above the early years' curriculum to preschool children from poverty. The quality of implementation of interventions by teachers has been raised as an issue in this review and EPs are in a good position to encourage and advise teachers in this regard. EPs should also remind educators that intervention should not stop in the preschool but needs to be returned to throughout school for pupils from poverty if they are to succeed in literacy and in life.

**5018 words**

## **Bridging Document**

*In this document I explain how I determined my research focus. I outline my ontological and epistemological position and how this affected my subsequent decisions. I describe the participatory research methodology and discuss the benefits and obstacles involved in carrying out research in this way. I explain and justify the different aspects of my method including data analysis. I discuss reflexivity and how this applies to my project. Finally I explore the ethical and quality issues in my research. I consider the links between my systematic review and empirical research throughout.*

### **Defining a Research Focus**

My first step in defining a research focus was to consult 'The Children and Young People's Plan' for the Local Authority (LA) in which I had gained employment. Poverty immediately jumped out as a key theme. The Association of North East Councils had identified poverty as a priority for the region because child poverty levels in the North East are the second highest in the country. An estimated 27.6 per cent of children in the LA are living in poverty (HMRC, 2008) which is higher than the regional and national average. The LA has recently produced a new document entitled 'Children and Families Plan and Child Poverty Strategy' in line with the Child Poverty Act 2010. This document describes many of the families in the LA as locked in a cycle of poverty and the need to find ways to end this cycle is discussed.

I also examined the literature relating to child poverty, cycles of poverty and poverty related to inclusion in education and the wider society. Within the literature, literacy emerged as a potential key to ending this cycle and the importance of early intervention came up time and time again. Coming from a 'how can we fix this?' mentality, both my systematic review and empirical research explore ways to improve literacy outcomes for children from poverty.

### **Ontology and Epistemology**

Taking a critical realist stance allowed me to carry out a quantitative systematic review and a qualitative research project. Through this perspective I

acknowledge that data can be collected which can provide information about how things are in the world (Willig, 2008) but that this knowledge is fallible (Scott, 2005).

Clegg (2005) argued that a critical realist perspective can 'contribute to a critique of evidence-based practice, while at the same time not abandoning the idea of evidence altogether' (p.415). As such, in my systematic review, I searched for an evidence base for the effectiveness of literacy interventions in a poverty population and provided a critique of the evidence presented.

Due to the nature of quantitative systematic reviewing, the question I attempted to answer became rather narrow. I concluded that there is a need for consideration of a wider range of factors in helping to improve the literacy skills of children from poverty. This led me to widen my net in my research project for which I chose a qualitative design. Scott (2007) suggested that qualitative research can compensate for inadequacies in quantitative research and vice versa. In this case, through my quantitative systematic review I aimed to find and evaluate evidence for the effectiveness of literacy intervention while through my qualitative research project I aimed to find out the details of what helps improve literacy skills through children's descriptions.

## **Methodology**

For my empirical research project I chose a participatory research methodology which reflects the general move away from carrying out research 'on' children to research 'with' children (Mayall, 2000). Previously in research, children have been an underestimated and underused resource (Alderson, 2000).

Participatory research places children as experts in their own lives and aims to develop this expertise by teaching specific skills which will empower them to take on a collaborative role in research (Langhout & Thomas, 2010).

Scott (2007) suggested that the methodological choice made by the researcher reflects a belief that the choice made will lead to a more truthful representation of the knowledge sought. I chose my methodology based on my belief that knowledge created by children about their own lived experiences can provide a

better understanding of their lives than that produced by adults alone. This is because of the unique insight children have into their own lives.

There are many benefits of engaging children in participatory research, both for the children and for the research itself. Participatory research methods are flexible, innovative and fun (O'Kane, 2000) which makes them suitable for working with children. Through participatory research, children can learn research skills which are transferable to other parts of life (Harding, 2001), for example, inter-personal skills (Kirby, 1999). In addition, it has been suggested that taking part in participatory research can enhance children's knowledge and confidence (Alderson, 2000; Crane, 2001) as well as developing their meta-cognitive skills (Roller, 1998).

Another benefit of participatory research for both participants and the wider society is emancipation as it can give a voice to those who are marginalised (Willig, 2008). Participatory research is particularly well placed in this way as one of its key aims is to change the power balance between the researchers and the researched (Clark, 2004). Participation in research allows children to take on an active role and to talk openly about their needs. Furthermore, the flexible environment created through participatory techniques gives participants more control over the research agenda (O'Kane, 2000). Alderson (2000) suggested that as well as the research outcomes, the skills and confidence gained through taking an active part in the research process can help participants to overcome disadvantage.

In terms of the research itself, the main advantage of using participatory methods in research is that it increases validity. Willig (2008) described validity as the extent to which research describes or explains what it sets out to and including participants actively in aspects of the research can increase the validity. For example, by involving participants in interpreting data, they are given the opportunity to offer feedback and to challenge the analysis which offers a better understanding of the data.

Furthermore, my choice of methodology is based on my belief that children can access the worlds of their peers with greater success than adults because they have more in common and speak the same language (Kirby, 1999). For



example, young researchers interviewing their peers can use their unique insight to pose the right questions (National Foundation for Educational Research, 2006), persuade interviewees to talk more freely and honestly (Crane, 2001) and have a better understanding of the answers given (Kirby, 1999). This too provides greater validity (Smith, Monaghan, & Broad, 2002).

On the other hand, there are some reasons to doubt the validity of participatory research. The belief that children have a unique insight into their own lives may be naïve as it assumes that people are transparently knowable to themselves (Gallacher & Gallagher, 2008) which may not be the case. Hence through my critical realist stance I admit that knowledge is fallible. In addition, the idea that young people are better able than adults to elicit the views of other young people may be flawed as taking on the role of researcher might create a distance between them and their peers. This is something I discuss further in my research.

Clark, Dyson, Meagher, Robson and Wootten (2001) wondered whether child-led research brings into question the credibility of the research among the wider research community which expects certain standards to be upheld. Smith et al. (2002) suggested that participatory research methods produce data which has not been collected in a uniform way. In addition, as such methods are time consuming and labour intensive, only a small number of participants can be involved which reduces reliability.

## **Method**

For my method I chose to teach a group of children research skills so that they could carry out their own research into the topic of developing literacy skills. Kellett (2005) advocated this approach, arguing that children have the capacity to become active researchers if they are taught the necessary research skills. Furthermore, Kellett stated that it is possible to teach children research methods without 'compromising its core principles' (p.1). In this way I hoped to avoid the loss of rigour which is widely reported in participatory research (O'Kane, 2000: Brownlie, Anderson, & Ormston, 2006).

Kellett (2005) suggested that in younger children only the gifted and talented contingency can access such learning. This did not sit well with me due to my views regarding equality and diversity. Moreover, dealing with the concept of improving literacy meant that it was even more important to obtain the views and insights of a group of children with a range of abilities. Consequently I did not put any limits on my sampling with the view to using scaffolding and differentiation to ensure that my research sessions were accessible to all.

The research sessions were designed to be enjoyable, mainly because I wanted the experience to be a positive one for the children. I achieved this by playing games at the beginning and end of each session and by creating an informal and relaxed atmosphere. For example the children were encouraged to call me by my first name, they could choose where to sit and they did not have to put their hands up to talk. This helped to build a positive relationship with the children which O'Kane (2000) suggested can promote honesty and engagement. Willig (2008) stated that the researcher must find methods which encourage the participants to express themselves as freely as possible and this seemed to work well.

The research sessions were also designed to be flexible. Flexibility is paramount in qualitative real world research (Robson, 2002) and accordingly my data collection techniques took an unexpected turn. Robson (2002) suggested that the nature of flexible research makes it possible for the researcher to 'capitalise on unexpected eventualities' (p.6). I realised during the process that the group's own insights into what helps them with literacy was a rich potential data source and I took advantage of this realisation by eliciting their views.

In order to collect the children's views, I facilitated the production of a mind map which the group added to on different occasions throughout the project. Woolner, Thomas, Todd and Cummings (2009) suggest that it is helpful within the research process if the researcher and participants have something to create together as it allows participants to express themselves more readily.

Effectively, then, my research project generated two different sets of data: the collaborative mind map and the children's own research. Although this was not

planned, it has been suggested that multiple methods, as opposed to single methods, are desirable (Darbyshire, MacDougall, & Schiller, 2005). Multiple methods can help to solve the problem of generalisability as a discovery made in one context can be checked in another (Willig, 2008). Darbyshire et al. (2005) argued that multiple methods can offer 'complementary insights and understanding that may be difficult to access through reliance on a single method of data collection' (p.417).

I wanted the children to be as involved as possible in the whole process, including data analysis. Kellett (2005) suggested that children can calculate descriptive statistics in quantitative data and they can be taught simple coding practices for qualitative data. Both sets of data produced through the research project were qualitative and Thematic Analysis was my chosen method of analysis. I chose Thematic Analysis because I wanted to be able to describe the data and organise it by identifying patterns which would ultimately help me to report it (Braun & Clarke, 2006). I chose Thematic Analysis over other qualitative methods of analysis because it is accessible and therefore appropriate for the first attempts at qualitative analysis (Howitt, 2010), which was the case for me and for the research group. Moreover, Braun and Clarke stated that, as it is a flexible technique, a further advantage is its usefulness in working in a participatory research paradigm with participants as collaborators. This proved to be the case as I was able to find a way to adapt it so that the children could be actively involved. This is explained in more detail on pages 49 to 50.

### **Reflexivity**

Forrester (2010) explained that reflexivity is important in research as the researcher needs to accept the potential bias brought to the process. I am aware that I have influenced the research process and that my interpretation of the findings is subjective. Clegg (2005) pointed out that any way of categorising the world is open to critique and can be replaced by a different set of categories and accordingly I acknowledge that the Thematic Analysis was subjective. Involving the children, however, lessened this subjectivity.

I believe the issue of reflexivity to be even more salient in participatory research as, in my project, I was influenced by the children's perceptions and immersed in the process. Howitt (2010) stressed the importance of acknowledging the impossibility of remaining outside of the research process and I openly acknowledge this in my research. I feel that I was able to apply greater objectivity to my systematic review as this was not my own research and it employed a fairly rigid, pre-determined method. I decided to write my systematic review in the third person, passive voice and to write my research report in the first person, active voice in order to reflect the difference in my proximity to the research.

My views towards participatory research changed as the project progressed. One of my key reasons for carrying out a participatory research project was to redress the power imbalance between the researchers and the researched. In my empirical research paper I discuss why I do not feel this was achieved. Moreover, despite intensive training, the interviews conducted by the research group were disappointingly short. I discuss many potential reasons for this in my research paper. I conclude that data generated by children is useful although not necessarily better than that generated by adults. This could, however, be due to issues within my research such as time constraints and the small scale of my study. If I was to carry out further study in this area I would be sure to have more time in which to carry it out. I would also like to explore ways to allow the child researchers to work with their peers on more hands-on, visual projects to try to further redress the power imbalance and to provide a meaningful joint focus, as I found this to work well in the production of the mind map.

Despite a change in my views regarding participatory research methods, I still believe them to be useful, morally sound and beneficial to the participants. As an Educational Psychologist, this experience has, therefore, reinforced my aim to practise as a non-expert, facilitator, empowering people as experts in their own lives.

### **Ethical Considerations**

The British Psychological Society (BPS) ethical guidelines (BPS, 2010) were consulted and followed. Table 9 shows how this was done.

Table 9: Ethical Guidelines

<b>Guidelines</b>	<b>How these were followed</b>
Principles	I respected the autonomy and dignity of my participants by seeking their informed consent and involving them in as many aspects of the research as possible within the time I had. I have ensured that my project has scientific value by seeking supervision from various sources and using this to plan and carry out high quality research. I worked with the pupils in collaboration and valued their views.
Risk	The participants were not exposed to any risks over and above that of everyday life. Being under the age of 16 means that the BPS classes them as a vulnerable group. With this in mind I was sensitive to their needs throughout the project.
Valid Consent	Informed consent was sought using the form in Appendix A. This was completed by parents and pupils. The form was written in collaboration with the school's Special Educational Needs Co-ordinator. The form used simple language and was free of jargon. It was decided that the same form would be appropriate for both pupils and parents as higher literacy levels in the parents could not be assumed. I explained how the project would work when I gave out the forms and then again in the first research session. I reminded the pupils both times of their right to withdraw and did this again during the project.
Confidentiality	The data is stored in a locked drawer and will be destroyed upon completion of the doctorate. The report has been written in such a way that neither the pupils nor their school is identifiable.
Giving Advice	Not applicable – no advice was given.
Deception	Not applicable – there was no deception.
Debriefing	The pupils received a debrief which can be found in Appendix B.

### **Quality Issues**

Ensuring quality in qualitative research is an important yet difficult task. Yardley (2000) provided four criteria which can be examined in attempting to ensure and evaluate quality. I will now explore these in relation to my own research.

- *Sensitivity to context:* I explored relevant literature, firstly through my systematic review and then in the context of my research. I was sensitive to the participants' socio-cultural context, taking extra care not to stigmatise them as poor. My research revolved around their perspectives which meant I was sensitive to their views and needs throughout. I tried to involve them as much as possible in the research process within the time available. I adhered to the BPS Ethical Guidelines.

- *Commitment and rigour*: I engaged with the topics of literacy, poverty and participatory research by reading about them in books, journal articles and via websites. I considered the political frameworks at international, national and regional level. With regards to methodology, I have set out in this paper my understanding of my methodology and my reasons for using a participatory research model. In order to ensure competence and skill I followed the guidance of Kellett (2005) who has researched and piloted such methods. Using two data collection methods has provided me with breadth of analysis; however, I do feel that the analysis lacks depth. This is a common problem in participatory research and I have discussed it generally as well as specifically to my project.
- *Transparency and coherence*: I have tried to clearly set out my arguments for what I have done and what I have found. Due to the small scale of the project I have had to be cautious about the power of my arguments. I have tried to be as transparent as possible about my data collection methods and have presented my findings in a clear way. Through my methodology section I have set out the theory behind my method and I have included a section on reflexivity.
- *Impact and importance*: As a research paper I hope that my findings will serve a purpose in terms of enriching understanding of both what helps children from poverty to improve their literacy skills and of participatory research methods. I have yet to feed back the research outcomes to the school and LA but when I do I hope it will have practical implications.

Due to the nature of participatory research methods, I believe that what I lost in rigour was made up for in sensitivity to context in terms of empowering children and valuing their views. My next steps are to provide feedback about my project to the school and the LA.

## **Conclusion**

I have used this document to explain what I did and why I did it in more detail than was possible elsewhere. This involved explaining how I defined my research focus which was closely linked to a consideration of the priorities in the LA where I work. Coming from a critical realist stance I acknowledged that

information can be obtained about how the world actually is but that this knowledge is subjective and fallible. This was further explored through reflexivity in that I was immersed in the project and consequently I was influenced by the children's views and experiences as much as they were undoubtedly influenced by mine.

I provided a rationale for my choice of methodology which sits within a participatory paradigm. My justification was based on my belief that children have a unique insight into their own lives and that they have privileged access to the insights of their peers, although, in the reflexivity section I discussed a change in my beliefs as a result of carrying out the research. Further reasons for my choice of methodology included the many benefits that it can infer both to the participants and to the research itself.

From the methodological underpinnings I went on to outline my actual method which included both planned and unexpected elements. I also used this document to outline how I tackled ethical issues and quality issues. The main ethical issue is that of avoiding labelling the participants as poor whilst fully informing them of the project aims. Within quality issues my main observation was that whilst experimental rigour is forfeited in participatory research, this can be made up for in the sensitivity to the context. Finally, where appropriate, I have explained the links between my systematic review and research project.

**3321 words**

## **How can participatory research methods be used to explore what helps children from economic disadvantage to develop their literacy skills?**

*The effects of economic disadvantage on literacy start in the early years and persist throughout school, making it an area worthy of study. Gathering the views of children from economic disadvantage about what helps them to develop their literacy skills is a gap in the research landscape. In this research project a participatory model was employed to obtain children's views. This involved training six pupils from a school situated in a deprived area to carry out research with their peers. Six themes emerged from my work with the group and the peer interviews they conducted regarding what helps to develop literacy skills. These were: resources, strategies, skills, people, enjoyment and practice. Positive effects of carrying out the research in this way included enhancing the pupils' wider skills and gaining an insight into the children's views. An important issue raised by this paper is that of the power imbalance between the researchers and the researched, even when both are children. Time constraints limited the scope of this study as participatory research is an intensive process. Implications for educators and, in particular, Educational Psychologists are explored. Possibilities for further study are discussed.*

### **Introduction**

#### ***The effects of poverty on literacy***

The effects of economic disadvantage on literacy are well documented. McIntosh et al. (2007) showed this starts before school. They compared the early literacy abilities of pre-schoolers of low socio-economic status (SES) with normative data and found that low SES children performed well below the expected level for their chronological age on tests of rhyme awareness and phoneme isolation. The Department of Education (2011b) has published statistics suggesting that this disparity continues throughout school. For details see page 2.

Many factors have been suggested to explain the effects of poverty on literacy. Eamon (2002) and Kainz and Vernon-Feagans (2007) have considered these factors within an adapted version of Bronfenbrenner's (1979) ecological model of child development. Their models consider factors within the micro, or



individual level; the meso level which includes home and school; and the macro level which represents the wider society including cultural beliefs and economic resources. For example, due to high unemployment in the area (macro level) parents may be unable to find employment and are therefore unable to provide resources at home to create a literacy rich environment (meso level). The resulting effect on the individual child (micro level) may be a lower cognitive ability due to the less stimulating environment and low motivation due to lack of opportunities in the area. Raffo et al. (2006) completed a mapping exercise of the effects of poverty on education in general and produced a similar model.

### ***Developing the literacy skills of children from poverty***

Studies which examine the effectiveness of interventions aimed at developing the literacy skills of children from disadvantaged backgrounds consider home or school-based intervention or a combination of both. There seems to be a bias towards interventions aimed at preschool children which implies a focus on early intervention. In terms of home-based interventions, there is evidence to suggest that supporting and encouraging parents' involvement in their children's education can boost literacy skills (e.g. Lonigan & Whitehurst, 1998; Reese, Leyva, Sparks, & Grolnick, 2010) as well as enhancement of the home literacy environment (e.g. Dever & Burts, 2002).

Within school-based interventions, some studies have shown the impact of specific in-class literacy curriculums (e.g. Crowe et al., 2009) whilst others have focused on the effectiveness of delivering additional support to children from disadvantage (e.g. Lo, Wang & Haskell, 2008; Nelson, Sanders, & Gonzalez, 2010). School-based studies also support the need for additional resources to boost the literacy skills of children from poverty (e.g. Clark & Kragler, 2005) and Kennedy (2010) is a proponent of the need for additional training and support for teachers in this area.

Gettinger and Stoiber (2008) reported the positive effects of an intervention which combined a tailored curriculum, additional teacher training and enhancement of the school literacy environment. Fransisco, Arias, Villers and Snow (2006) compared three different interventions; tutoring, parent involvement and additional classroom intervention, and found a combination of

all three to be most effective. It seems that there are numerous possibilities but no clear solution to the problem of enhancing the literacy skills of children from economic disadvantage. Bhattacharya (2010) summed this up, stating, 'no single educational intervention will likely overcome the disadvantages faced by young children from poor families' (p.126).

### ***Participatory research***

Over the past twenty years there has been a movement towards allowing and empowering children to be active participants in society. The United Nations Convention on the Rights of the Child (United Nations, 1989) stated that children have the right to express their views on matters concerning them; pupil participation was one of the foundations of the Every Child Matters agenda (Department for Education and Skills, 2004) and it is advocated in the Education Act 2002 and the SEN Code of Practice (Department for Education and Skills, 2001). Consequently there have been many research projects which have included children in a participatory role in the realms of social science, health and education (Burton, Smith, & Woods, 2010; Sime, 2008; Smith et al., 2002).

Participatory research is child focused research in which methods are used to allow children or young people to be involved in the research process (Hart, 1992; Kirby, 1999). Hart (1992) conceptualises the extent to which children are involved as an eight rung 'Ladder of Participation', presented in Table 10 below. The first three levels represent non-participation, for example, 'tokenism' whereby children appear to be given a voice but actually have no real input or choice in the process. The other five levels represent varying degrees of participation.

Table 10: Hart's Levels of Participation

Level	Description of Participation
8	Child-initiated, shared decisions with adults
7	Child-initiated and directed
6	Adult-initiated, shared decisions with children
5	Consulted and informed
4	Assigned but informed
3	Tokenism
2	Decoration
1	Manipulation

The ladder concept fits well with the research process as children could potentially be involved in all or some of the necessary stages, from choosing the focus of the project, designing and conducting the research, to analysing and disseminating the results.

For a discussion of the benefits and limitations of using participatory research, see page 34.

***Participatory research examining the effects of poverty on literacy***

Participatory research often involves those who are marginalised in society, as a means of emancipation, and children from economic disadvantage are one such group (Clark, 2004). Consequently there is a growing body of research involving participatory models which investigates the educational experiences of children from different social backgrounds (Hirsch, 2007). Kellett (2009) studied the differences in literacy opportunities between children from different socio-economic areas, employing a participatory model to allow the children to carry out research projects into any part of literacy that interested them. Findings included a disparity in literacy confidence and in homework opportunities between children from different economic backgrounds.

## ***The current study***

Fischel (2007) suggested that there is much literature which attempts to explain the effects of poverty on literacy but a dearth of that which explores how to improve the literacy skills of children from poverty. In the current study I aimed to obtain the views of children from disadvantaged backgrounds regarding what they find useful in helping them to develop their literacy skills as it would seem this is missing from the literature. I used a participatory model of research whereby children are taught the necessary research skills and are empowered to carry out their own research. The question to be explored, therefore, was, 'how can participatory research methods be used to explore what helps children from economic disadvantage to develop their literacy skills?'

## **Method**

### ***Participants and sampling***

I carried out the study in a junior school in the North East of England. The school is located in one of the 10 per cent most deprived areas in the country, according to the England Indices of Deprivation (Department for Communities and Local Government, 2010).

I provided an information sheet / consent form and a verbal account of the project to all pupils in the school's two Year 6 classes and asked the pupils to return the consent form if they wanted to take part in the project. Four girls and two boys of mixed academic ability volunteered. The pupils were all 11 years old.

### ***Ethics***

I informed the pupils that participation in the project was voluntary. I told them that their personal details would remain anonymous and that they could withdraw from the project at any time. I obtained informed consent from the pupils and their parents (see Appendix A) and I debriefed the pupils at the end of the project (see Appendix B).

A sensitive ethical issue in the study was how to inform the pupils that the project was about improving the literacy skills of children from disadvantaged backgrounds without stigmatising the pupils as poor. Sime (2008) suggested the solution of referring to poverty in terms of the geographical area. A discussion with school staff confirmed that this would be appropriate as it was well accepted in the community that the geographical area was a poor one. This meant that a link to deprivation was mentioned in a respectful way so that consent was informed without the children feeling individually stigmatised.

### ***Procedure***

In negotiation with school staff, we identified a ten week window of opportunity between the pupils' National Curriculum tests (known as SATs) and the end of the summer term. We established a convenient day and time so that I could work with the pupils for one hour per week and I drew up an initial plan for the sessions, presented in Table 11. An example session plan can be found in Appendix C. I planned the sessions based on Kellett's (2005) book *How to Develop Children as Researchers*. Each session consisted of a ten minute warm-up activity, usually a game aimed at promoting team working skills, and ended with a ten minute plenary. The main part of each session involved either learning about the research process or discussing the literacy topic. Attendance at the sessions was high with four members of the group attending all ten sessions and the other two members attending nine out of ten sessions.

Table 11: Initial Plan for Group Sessions

<b>Week Number</b>	<b>Content</b>
1	Introductions to the group, to research and to the topic of literacy.
2	Teaching about research ethics; further exploration of literacy topic.
3	Teaching about research methods including focus groups, interviews, questionnaires; further exploration of literacy topic.
4	Teaching about research methods including types of questions; further exploration of literacy topic.
5 - 7	The group design their research and prepare to carry it out.
8 - 9	The group carry out their research.
10	Debrief and celebration.

I set the initial plan for the project only provisionally as I expected it to change and evolve as the sessions progressed. The main change to the initial plan was that the pupils took longer to design and prepare their research than I anticipated therefore this continued into week eight leaving only week nine to carry out the research.

As the project progressed it became evident that there were two levels to the overall study: one was the research carried out by the pupils as planned; the other was the unanticipated value of the pupils' own views about literacy gathered throughout the weekly research sessions.

### ***The pupils' research***

The pupils chose to carry out interviews with their peers for their research project. With support, they produced their own information / consent form (see Appendix D) and their own semi-structured interview schedule (see Appendix E). (Please see Appendix H for more details about how the pupils created their interview questions.) Five of the pupils' classmates volunteered to take part. The research group conducted the interviews in pairs in a quiet room free from distractions. The group asked me to be present during the interviews so I sat at the opposite end of the room from the interviews reading a book to decrease any negative effects of my presence. The pupils recorded each interview using a Dictaphone and I transcribed each one.

### ***The views of the research group***

I explored the views of the research group regarding what helps them with literacy in weeks two, four, five, seven and eight. I did this through the use of a collaborative mind map as visual methods are thought to make research more accessible to children (Thomson, 2008). In weeks two, four and five the group produced the mind map through paired and group discussions (see Figure 1, below). They wrote down their ideas on to small mind maps which were then combined to create one large group mind map. In weeks seven and eight we analysed the mind map. In week 10, the group completed a short questionnaire about their experiences of the project as a whole (see Appendix F).



The next part of the analysis was to search for and define themes. I carried out a preliminary version of this which I took to the research group for validation. The group were encouraged to change items round, to change themes' labels or to add to or eliminate themes. The group's changes included only the moving of some items between themes, for example, 'music' was moved from 'resources' to 'strategies'.

Analysing the interviews proved to be problematic as they were so brief. I attempted a Thematic Analysis but decided that the scripts were not long enough. Instead I simply underlined key words and phrases. A sample script can be found in Appendix G.

## **Findings**

### ***Children's views of what helps with literacy***

Producing the mind map with the research group revealed five themes relating to what helps to develop their literacy skills. These are presented in Table 12 (p.52) along with items from the interviews.

As shown in Table 12 many more items were stated by the research group when making the mind map than by the interviewees during their interviews. This can be partly explained by the difference in the time used for the two different activities as the mind map was constructed over a number of weeks whilst the interviews each lasted less than five minutes. It is important to note, however, that two hours were available for the interviews if necessary.

Despite less time being used, new items did emerge through the interviews. One new item was 'myself' in the 'people' theme as one interviewee said "sometimes I just get on myself". In the 'enjoyment' theme, responses included, "I think it's fun because you learn loads of stuff and that," and, "[I like] some [literacy lessons] because some are more interesting than others". Three interviewees linked enjoyment to the difficulty level of the lesson, for example, when one interviewee was asked why she enjoyed literacy more than other lessons she replied, "I find it easier than others".

A sixth theme, 'skills' has been tentatively added as two of the interviewees talked about their current literacy skills helping them with their literacy in



general. For example, when asked what helps in literacy one interviewee replied, “being able to read my work”.

Three out of the five interviewees appeared to find it difficult to answer the first question. Two of them did not respond without prompting, two replied, “don’t know” and one laughed. Furthermore, one of the interviewees stated, “nothing” in response to the question, ‘what do you use in literacy to help you?’

### ***The participatory research process***

The questionnaire filled in by the research group at the end of the project yielded many positive comments. The children were asked what they had learnt, if anything was good or bad about taking part in the project and for any other comments. Their responses are presented in Table 13 (p.53). It is interesting that the pupils provided a mixture of comments about both the research process and the topic content. A positive effect of the research is that it would seem they found it useful to think about literacy in this way.

Table 12: Themes

<b>Theme</b>	<b>Items from the mind map</b>	<b>Items from the interviews</b>
<b>People</b>	teachers teaching assistants family friends supply teachers head teachers deputy head teacher visitors partner helpers	teachers classroom assistants parents friends myself mam
<b>Practice</b>	reading tests homework research activities practical activity	reading writing
<b>Enjoyment</b>	fun enjoyment	fun enjoy learn a lot easier interesting
<b>Resources</b>	books dictionary pictures diagrams audio books computers laptops internet Powerpoints information books alphabet thesaurus stories magazines	books dictionaries
<b>Strategies</b>	team work planning music rap songs	targets
<b>(Skills)</b>		reading writing

Table 13: Questionnaire Responses

<b>Research</b>	<b>Literacy</b>	<b>Other</b>
'I learnt all about the interview process and how to make a questionnaire.'	'...also I learned more about literacy.'	'I learn a lot about this project because Susie help us in all of the lessons.'
'We also learned about words, ethics etc.'	'It helped me show what I know about literacy...'	'[I liked] a lot of stuff all of the games.'
'...we learned about different words.'	'I loved being able to express my feelings about literacy...'	'Nothing was bad about it.'
'I learnet [sic] about open questions, closed questions etc and even learned about ethics.'	'We learned about different stuff about what helps you in literacy...'	'...also [it was good] to be able to just relax and just work.'
'I learnt stuff I never knew before like open questions and closed questions.'		'...and loved working in a team and with Susie.'
		'[I enjoyed] doing work and interviewing people.'
		'I now [sic] how to keep better secrets.'
		'[I enjoyed] learning new stuff.'
		'[I enjoyed] playing games like the bob game and the interviews.'

## **Discussion**

### ***Literacy***

This study suggests that there is a multitude of factors involved in helping children from poverty to develop their literacy skills, consistent with previous research (e.g. Fransisco et al., 2006; Gettinger & Stoiber, 2008). The perceived importance of resources is consistent with the findings by Clark and Kragler (2005) concerning the literacy environment, and the importance of people may reflect Kennedy's (2010) emphasis on additional training for teachers.

Despite home-based intervention featuring widely in the extant literature (e.g. Reese et al., 2010; Dever & Burts, 2002), there was not a great deal of focus on the home in the interviews or in producing the mind map. This was only explicitly mentioned with the items 'family,' 'parents', 'mam' and 'homework' while the majority of the other items were related to school. Throughout the project I sensed that for the pupils the term literacy was only the name of one of their lessons at school and consequently it may be that the pupils do not link literacy with home life. One interviewee said, "I don't do any [literacy] at home unless I get homework," which implies a lack of awareness of the rich uses of literacy outside of the school environment. In addition, Kellett (2009) found that children from more advantaged families reported receiving more and better quality help with their homework than children from poorer families. It has been suggested that a range of factors including those outside school should be considered in attempting to decrease the education gap between less and better off children (e.g. Goodman & Gregg, 2010; Hirsch, 2007).

The item 'myself' in the people theme suggests that some pupils may feel that their learning is their own responsibility and there may be an element of autonomy in being able to help themselves. Goodman and Gregg (2010) found that children from poorer families have much less belief in their own ability than children from richer families. In addition, Kellett (2009) found that children from poverty lack confidence in their literacy compared with their better off peers. Goodman and Gregg (2010) discovered links between confidence and educational success in that children are more likely to perform well in tests at age 11 if they have strong beliefs in their own ability. They suggest that this is an important point for policy makers.

It was also interesting that pupils thought their current literacy skills helped them with their literacy in general. It is believed that literacy skills are necessary to allow pupils to access the wider curriculum (e.g. Fisher, 2002) and it would seem this is also true of the literacy curriculum. This further confirms the importance of early intervention and reflects the links between literacy proficiency, inclusion in school and in society (Hirsch, 2007). One interviewee acknowledged this in saying, “[literacy] will help is [sic] when I’m older”.

### ***Participatory research methods***

The findings from this study corroborate the suggestion by Kirby (1999) that engaging in the research process enhances children’s knowledge. Many of the comments made by the research group refer to learning new things, both about literacy and the research process. For example, one member of the group wrote, ‘we learned about different stuff about what helps you in literacy,’ and another wrote, ‘I learnt [sic] about open questions, closed questions etc and even learned about ethics’. Kirby (1999) contends that participatory research methods can improve children’s interpersonal skills which the children alluded to in their comments about participating in the games, the team work and the interviews.

Roller (1998) suggested that participation can improve children’s meta-cognitive skills. The findings suggest that the research group found it useful to think about what helps them in literacy, for example, one pupil wrote, ‘it helped me show what I know about literacy’. This may have been a positive side-effect of the research as Kolb and Kolb (2009) explained, reflecting on learning can increase learning power. In addition, Bandura (2003) believes that thinking and learning about your own learning can increase self-efficacy. Langhout and Thomas (2010) view participatory research as an intervention in itself with the recognition that children learn new skills through active engagement.

Table 12 (p.52), shows that producing the mind map was a far more data rich endeavour than the interviews. This finding supports the suggestion by Woolner et al. (2009) that when working with children it is useful to have something to create together as it helps them to express themselves more freely.

Furthermore Darbyshire et al. (2005) proposed that children are generally familiar and comfortable discussing topics in groups as they regularly do this in

the classroom and Mayall (2000) suggested that by talking with each other, children can firm up their knowledge and learn from each other. O’Kane (2000) found that children prefer active communication (doing and moving) to passive communication (just talking) which could further explain the difference in detail between the two sets of data.

As explored on page 34, one of my reasons for carrying out a participatory research project was in attempting to redress the power imbalance between the adult-researcher and the children. Alderson (2000) suggested this imbalance exists due to inequalities in age and status. I am uncertain as to whether or not I succeeded in redressing this imbalance. One of the pupils stated in the questionnaire, ‘[I] loved working in a team and with Susie.’ Referring to me as separate from the team implies that the difference between the child researchers and the adult researcher was apparent to the pupils.

I am also concerned that the issue of unequal power relationships was present between the interviewers and interviewees. Despite them being the same age, perhaps membership of the research group, and indeed holding the position of interviewer, resulted in an imbalance in status which produced a power differential. Murray (2006) carried out peer-led focus groups with children and found that a power imbalance was present between the young person chairing the focus group and the focus group members. Brownlie et al. (2006) suggested that power is an unavoidable part of the research process, even between children.

In addition, the fact that the interviewers and interviewees were members of the same peer group may have resulted in anxiety about confidentiality. The research group were taught about ethics, and therefore understood the concept of confidentiality, and of course they provided information about this in the consent form completed by the interviewees. This understanding of confidentiality was acknowledged by one member of the research group in the questionnaire; ‘I now [*sic*] how to keep better secrets’. Brownlie et al. (2006) suggested that anonymity and confidentiality are common issues when children are involved in carrying out their own research. I wonder if either or both of these issues, of a power imbalance and of concerns about confidentiality, could further explain the short length of the interviews.

Lomax (2012) stated more ethical concerns regarding children interviewing other children. She found that the child interviewers in her study would occasionally interrupt interviewees or ask questions in ways that did not acknowledge the interviewees' responses. This led to a lack of opportunity for the interviewees to freely express their views. Lomax goes as far as to say that child-led methods may diminish the voices of other children. My experience suggests that it is not necessarily a better way to collect data compared to having an adult interviewer. Franks (2011) suggested that having an adult interviewer ask the children's questions on their behalf could actually be more empowering than having them ask their own questions.

In terms of participation, I would place my research project on rung six of Hart's ladder as it was adult-initiated but key decisions were shared with the children. I cannot say it is at a higher level on the continuum of participatory research methods due to its structured and prescriptive nature, in that I defined the question to be investigated and produced a structure through which it could be explored in a collaborative way. This was deemed necessary due to the time available and the age and ability of the research group. A substantial risk of employing a more informal, less-directed participatory process is that little of what is generated relates to the core research question (Holland, Renold, Rose, & Hillman, 2010). This was not a risk I was able to take. Holland et al., however, emphasise the importance of how the participation is mediated rather than trying to measure how much participation is achieved. Moreover, Franks (2011) stated that a method which is entirely participatory is yet to be found and described total participation as a 'false goal' (p.18). Instead she believes it is more helpful to think of projects having 'pockets of participation' dispersed throughout (p.15).

### **Limitations**

One limitation to this study was the measure of poverty used. I carried out the study in a school situated in an area of economic deprivation which does not guarantee that each participant was living in economic disadvantage. The ethics of enquiring about individual family circumstances prevented me from verifying each family's financial situation. Sime (2008) suggested that admitting to poverty is a sensitive issue and that many children do not perceive themselves as being poor. It is noteworthy that hints at some of the participants' economic

status were given throughout the sessions. For example, one participant talked about their parents going to interviews at the job centre and another told the group that they had never been on a holiday.

A further limitation was that of time constraints. My initial plan was for the children to carry out all elements of the research including designing the methods, carrying out the research, analysing the data and disseminating the results. The school, however, preferred for the project to start after the children's SATs which left only ten weeks before the school holidays. I fitted in as much as I could into this time. Langhout and Thomas (2010) suggested that inadequate time is a common problem within participatory research and state the need for boundaries such as deciding upon a specific start and end point for the work. Robson (2002), reassuringly, stated that real world research has to be flexible.

As a result of the time constraints I had to analyse the data collected by the pupils myself. I experienced conflict in, on one hand, wanting to allow the pupils full control over the design of the research, while on the other hand knowing that my analysis would not work unless certain criteria were met. I was worried that the use of leading or closed questions would invalidate my results. Brownlie et al. (2006) summed up this problem as the 'participation versus rigour' debate. The solution in my case was to coach the pupils in question design and interview techniques right up until the interview day. Fortunately this worked well, although the pupils found it difficult to encourage the interviewees to expand on their answers which may be a further explanation of why the interview scripts were so short. In a child-led project, Burton et al. (2010) reflected that it was difficult to draw out common themes from the data set produced by the children and that the conclusions reached by the children therefore lacked coherence. By taking control of the analysis, I was able to avoid this issue, although again this resulted in less participation.

One of my main reasons for using a participatory research methodology was my assumption that it would offer increased validity. This was based on my belief that children are experts in their own lives and that by taking on an active role in the research process they could provide a better understanding of what helps



them in literacy than I could have achieved as an adult researcher. I believe that use of the collaborative mind map was successful and helped achieve this.

Furthermore, I believed that children would have greater success than adults in accessing the world of their peers. In the case of interviewing, this would be due to their ability to ask the right questions, using the right language, and through allowing interviewees to talk more freely than when being interviewed by an adult. Carrying out this research project has made me question these assumptions. I still believe that children are experts in their own lives. It is, however, paramount that we, as adult co-researchers, find appropriate methods through which they can discover and demonstrate this expertise. This is far from an easy task and more research is required to refine current methods and develop new ones.

In terms of children accessing the world of their peers, I have found that interviews are not a suitable way of facilitating this access. Interviewing and being interviewed are unfamiliar tasks to children. They require sophisticated social skills which many children, and indeed some adults, have perhaps not yet developed. The research group found it far easier to create closed questions than open questions. I supported them to create open questions as these are most appropriate in the case of an interview (see Appendix H). In hindsight, perhaps their original closed questions would have been more appropriate for them to ask and easier for the interviewees to answer. This may be linked to their stage of development.

I chose the method of 'Children as Researchers' to try to ensure rigour by teaching the children traditional adult research methods. Using more child-friendly methods would increase participation but would more than likely decrease rigour. Validity within the 'participation versus rigour' debate is such that to increase validity, by increasing participation, rigour may have to be sacrificed. It would seem then that participation and rigour are two concepts which are difficult to reconcile.

In conclusion, it does not seem that validity was increased in the case of the child-led interviews. The questions asked were not the 'right' questions and the interviewers found it difficult to encourage the interviewees to speak openly. This may have been due to imposing an adult-style research method onto

children. I believe it is valuable to include children in the research process but that the methods used must be appropriate to their stage of development and should fit with their lived experiences.

### **Implications**

Educators working with young people from economic disadvantage would do well to consider a range of factors with regards to literacy development. These include the physical and human resources available, the value of opportunities for practice, the need to teach and develop the use of strategies and the importance of promoting enjoyment. Educators could build on opportunities for children to reflect upon their literacy learning. Policy makers are reminded of the importance of early intervention as young people acknowledge that by Year 6 basic literacy skills are required to access the literacy curriculum.

Implications for the Educational Psychologist (EP) consist of those related to literacy and those related to participatory research methods. EPs working in deprived areas should promote the use of a holistic approach with regards to literacy development. A common problem raised by teachers is that of literacy underachievement. The EP could use the themes generated in this study as a template to explore possibilities for developing literacy practices at a whole school level.

With regards to participatory research methods, EPs are well placed to carry out this type of research due to their in-depth knowledge of group processes, research methods, schools and children. A key role in the work of the EP is to advocate pupil voice (Department for Education and Employment, 2000) and one way to do this is through participatory research. Educators may wish to consider using participatory research methods within the curriculum because, as well as providing pupils with a forum for expressing their views, it can help to develop their knowledge and confidence and enhance their cognitive and interpersonal skills. EPs could take on an advisory role with school staff wishing to carry out participatory projects, as outlined by Burton et al. (2010).

### **Further Study**

Having established six themes regarding what helps children from economic disadvantage to develop their literacy skills, further research could focus on

ranking the themes in order of importance. The assertion by Langhout and Thomas (2010) that participatory research can be viewed as an intervention in itself also merits further investigation. Future research could explore the skills and attitudes of child researchers before and after a participatory project.

## **Conclusions**

This research project reflects the messy nature of real world research (Robson, 2002). In setting out to find out about how to help children from economically disadvantaged backgrounds to develop their literacy skills, I potentially learnt more about the participatory research process. This emphasis on process over impact is a documented issue in the field of participatory research (Holland et al., 2010). Nevertheless, I found out that children are knowledgeable about what helps them to develop literacy skills and they are a valuable source of ideas about a range of people, resources and strategies that can help. The findings regarding literacy generated by the research group could be useful in informing practice and intervention.

In relation to participatory research methods, I found that an adult-initiated collaborative activity was a more effective way of gathering data than child-led interviews. My findings suggest that whilst children have the capacity to learn about and take part in aspects of research, adult guidance and facilitation is essential. I also found that power differentials exist no matter who carries out the research. These findings have led me to believe that data produced by children, as opposed to adults, is useful but not necessarily better.

**5409 words**

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## **Appendix B: Debrief**

Thank you all very much for being part of the research group. This was a project about finding out pupils' views of what helps with literacy in areas where there isn't a lot of money.

You attended ten sessions which involved learning about research, ethics, methods and types of questions. Over the weeks you told me what helps you with literacy and you helped me to put this into categories. You carried out interviews with some of your friends.

With your permission I will let other people know what we have found out and about our experiences by writing about it. As you know, your names and the name of the school will be removed so that it is confidential.

You all had really good ideas and were each a valuable member of the group. I have enjoyed working with you and getting to know you.

Do you have any questions?

## Appendix C: Research Session Plan Example

Time	Objectives	Content	Resources
1.05 – 1.15	Recap from last week and warm up.	Warm up activity – ‘categories’ game. Recap from last week – words learnt: ‘participants,’ ‘ethics,’ and the six ethical considerations.	
1.15 – 2.10	To understand the use of three research methods.  To explore the advantages and disadvantages of three research methods.	Remind the group of our research aim – to find out what helps children with literacy. Ask if they have any ideas of how we could go about this. Explain that I will teach them about three different methods and that we will discuss their advantages and disadvantages.  The topic of school dinners will be used throughout this session in order to provide an accessible example.  <u>Questionnaires:</u> Discuss what a questionnaire is; have they ever filled one in? Show them an example and have them complete it.  <u>Interviews:</u> Discuss what an interview is; have they ever been interviewed? Split into pairs. One to interview the other pair. Discuss how to record answers.  <u>Focus groups:</u> Role play a focus group.  After each we will discuss the advantages and disadvantages and we will reflect on this at the end as well.	Prompt questions for exploring advantages and disadvantages + flip chart paper to record.  Example questionnaire related to school dinners.
2.10 – 2.15	To recap the research methods	As a group the children to try to recall the 3 methods. Lining up activity – shoe size, first letter of surname. (by request)	



## Appendix D: Consent Form / Information Sheet Produced by the Research Group

### Consent form/information sheet

Our names are A, B, C, D, E and F and we are doing a research project about what helps children in literacy. We are looking for volunteers to take part in our interview. We are looking to find out about what you like and dislike in literacy and what helps you. The interview will last for about 15-20 minutes.

Everything we hear in the interview is confidential which means it will be kept secret. Your name would be kept private. It is also voluntary so you won't have to do it if you don't want to. If at anytime you want to leave the interview you have the right to withdraw.

This is part of a wider project by Susan Greig from Newcastle University about what helps children with literacy in areas where there is not a lot of money.

If you want to take part in this interview, please complete this form and bring it back to your teacher as soon as possible but if there are too many requests they will be picked out of a hat.

-----  
Name:

Age:

Year:

Class:

I consent to take part in the interview and for my contribution to be used anonymously by Susan Greig in reports and presentations.

Pupil Signature:

Date:

Parent Signature:

Date:

Thank you.

## Appendix E: Interview Questions

### Questions:

1. What do you think helps you in literacy?
2. What do you use in literacy to help you?
3. Do you think literacy is fun and why?
4. What do you think about literacy?
5. Do you like the lessons in literacy and why?
6. Who helps you in literacy at home or in school?

## Appendix F: End of Research Questionnaire

1. What did you learn about as part of the research group?  
(If you feel you didn't learn anything just write 'nothing'.)

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.....  
.....  
.....  
.....

2. What was good about taking part in the research?  
(If you think there was nothing good about it just write 'nothing'.)

.....  
.....  
.....  
.....  
.....

3. What was bad about taking part in the research?  
(If you think there was nothing bad about it just write 'nothing'.)

.....  
.....  
.....  
.....  
.....

4. Any other comments?

.....  
.....  
.....

Thank you!

## Appendix G: Sample Interview Transcript

- Q What helps you in literacy?
- R (long pause) mmm
- Q What helps you in literacy?
- R Mmmm I don't know.
- Q What do you think helps you in literacy?
- R Reading and writing.
- Q Right. Who would help you in literacy?
- R The teacher and sometimes friends.
- Q What do you use in literacy to help you?
- R Emmm. Dictionaries.
- Q How would dictionaries help you?
- R Em, with words and phrases you don't know.
- Q Right. Do you think literacy is fun and why?
- R Em, I don't think it's fun but I enjoy it over other lessons.
- Q Why do you enjoy it more than other lessons?
- R Em, I find it easier than others.
- Q What do you think about literacy?
- R Em, it's interesting.
- Q Who helps you in literacy?
- R Em. The teacher and sometimes my friends.
- Q Do you like the lessons in literacy and why?
- R Some of them because some are more interesting than others and some you learn a lot from and some you don't.
- Q What do you do in literacy?
- R Em, reading, writing, poetry and other things.
- Q Who helps you in literacy at home or in school?
- R The teachers, classroom assistants and sometimes your parents.
- Q Thank you for your time. Everything you've said today will be kept personal.

## **Appendix H: Further Details about Question Creation**

In week four we looked at examples of different types of questions, including closed and open questions, multiple-choice questions and those using a Likert scale format. The group found it easy to identify the different question types and enjoyed answering them in an example questionnaire. This led to a discussion about the drawbacks and merits of the different question types. The group appreciated, for example, that a closed question would take less time to answer whereas an open question would provide more detailed information.

By week six the group had decided that they would like to carry out interviews as their chosen method of research. The group understood that open questions were the most appropriate in this case. I asked them to brainstorm, in pairs, some questions about our literacy topic. This presented a problem as the group really struggled to come up with open questions. Examples of the questions they came up with at this point are: 'Do you do your homework?' – 'Does it help you with your literacy?' and 'Do you enjoy doing literacy?' These were all closed questions! Before week seven I had to think about how to apply scaffolding so that the pupils would be able to come up with open questions.

In week seven I asked the group to think about more questions. This time I explained to them that a good way of constructing open questions was to make each question start with 'what', 'why' or 'how'. I also encouraged them to check their questions by answering them themselves to be sure that more than a one-word response was required. This proved to be very effective and most of the questions the pupils thought of from then on were open. Again in pairs, the pupils brainstormed different questions.

In week seven we had a double session as we were running out of time. In the second half of this session, the group were split into pairs again to carry out different tasks. One pair was given the task of narrowing down the list of questions, which resulted in them deciding on ten possibilities. These were then presented to the rest of the group who took a vote to decide which would be the final six. The final interview questions can be found in Appendix E.