



What do rigorous evaluations tell us about the most promising parental involvement interventions?

A critical review of what works for disadvantaged children in different age groups

Beng Huat See and Stephen Gorard



EXECUTIVE SUMMARY

CHAPTER ONE **BACKGROUND**

- 1.1 Research background
- 1.2 Definitions of terms
- 1.3 The review
- 1.4 Structure of the report

CHAPTER TWO **CONDUCTING THE REVIEW**

- 2.1 Identifying the studies
- 2.2 Cleaning the dataset
- 2.3 Data extraction
 - 2.3.1 Overview
 - 2.3.2 Method
 - 2.3.3 Comments/Limitations
- 2.4 Method of assessing the quality of evidence
- 2.5 Synthesis of evidence

CHAPTER THREE **JUDGING RESEARCH QUALITY**

- 3.1 Inconsistent definitions and outcome measures used
- 3.2 Influence of confounding variables
- 3.3 Rigour
- 3.4 Inappropriate method of analysis and synthesis
- 3.5 Gradient of evidence

CHAPTER FOUR **THE MOST PROMISING STUDIES**

- 4.1 Studies with positive outcomes
- 4.2 Studies with unclear or negative outcomes
- 4.3 Conclusion

CHAPTER FIVE **PARENTAL INVOLVEMENT INTERVENTIONS FOR PRE-SCHOOL CHILDREN**

- 5.1 Studies with positive outcomes
- 5.2 Studies with negative/unclear outcomes
- 5.3 Conclusions

CHAPTER SIX **PARENTAL INVOLVEMENT INTERVENTIONS FOR PRIMARY SCHOOL-AGE CHILDREN**

- 6.1 Studies with positive outcomes
- 6.2 Studies with negative/unclear outcomes
- 6.3 Conclusions

CHAPTER SEVEN **PARENTAL INVOLVEMENT INTERVENTIONS SECONDARY SCHOOL-AGE CHILDREN**

- 7.2 Studies with positive outcomes
- 7.2 Studies with negative/unclear outcomes
- 7.3 Conclusions

CHAPTER EIGHT **PARENTAL INVOLVEMENT INTERVENTIONS ACROSS AGE GROUPS**

- 8.1 Studies with positive outcomes
- 8.2 Studies with unclear/negative outcomes
- 8.3 Conclusions

CHAPTER NINE **CONCLUSIONS AND IMPLICATIONS OF THE REVIEW CHARACTERISTICS OF THE MOST PROMISING INTERVENTIONS**

- 9.1 Messages for users
- 9.2 Messages for funders
- 9.3 Messages for researchers

REFERENCES

APPENDICES

- Appendix A – Excluded studies and their reasons for exclusion
- Appendix B – Studies excluded at Stage 2
- Appendix C – Reported impact of interventions by phase of schooling
- Appendix D – Quality judgement of studies and the intervention effects on academic outcomes by phase of schooling
- Appendix E – Summary of studies included in the review
- Appendix F – Characteristics of the most promising interventions

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EXECUTIVE SUMMARY

Introduction

- Narrowing the achievement gap for children from disadvantaged backgrounds has been the concern of successive UK governments and governments in many developed countries in recent years.
- Previous work has shown that there is a causal influence of parental involvement on young people's educational outcomes.
- The aim of the review is to identify the most efficacious programmes for different age groups of children, and the promoting and inhibiting factors in implementing such programmes.

Methods

- The major search began with 12 electronic databases using bespoke keywording syntax.
- Studies located were cleaned and data extracted using a template that included the key features of the intervention and the research design of the study.
- Studies were synthesised by first classifying them by phase of schooling and then by themes.
- The reported impact of each study was noted and to this we added our quality assessment. This was based on the clarity of reporting, rigour of the study, fidelity and evaluation process. Each study was then given a weight of evidence based on these criteria.

Results

- Electronic and hand searches identified an initial 1,649 studies.
- A total of 68 studies met the inclusion criteria.
- No high-quality study was found.
- The best studies were rated as medium or near medium ($n = 7$).
- Almost all studies had serious flaws. These included: small samples (fewer than 100 overall, many with fewer than 20 in each arm), lack of randomisation, inappropriate comparators, unequal dropout after randomisation and inappropriate use of significance tests for non-random samples, no pre- and post-test comparisons.

- This makes the findings hard to synthesise, means that a traditional meta-analysis would not be secure, and also means that the initial aims of the review had to be modified.

Findings

- Four of the seven medium-quality studies suggested positive effects.
- Three of these related to the Chicago Child–Parent Center Program and involved a combination of interventions (including parent, classroom and economic interventions).
- Three other medium-quality studies reported negative or no impact of parental involvement on school outcomes, suggesting that children may actually be better off without the intervention.

Implications

- Funders need to call for new primary research that will rigorously develop and evaluate the most promising parental involvement interventions.
- Funders should cease funding merely associational or explanatory work in this area.
- They should ensure that programmes and fields of research make suitable progress, or cease funding them.
- Researchers must wake up to their ethical responsibilities to the public and to research funding bodies.
- They must see their work as part of an ongoing and larger research cycle working towards an evaluation.
- They must ensure that promising work moves to a trial or other suitably rigorous evaluation phase, and that unpromising work ceases.
- They must report research scrupulously.
- Adopting some basic recommendations about the design and process of research would lead to a considerable improvement.
- The limitation on parental involvement interventions will be the willingness and capacity of parents to be involved.
- For users such as policy-makers and practitioners, the key message from this review is that there is no solid evidence base for intervention yet.
- Classroom interventions to achieve the same end currently have more evidence of effectiveness in raising attainment.
- The most promising phase is pre-school and preparation for primary school.

- The most effective programme in this review is based on providing institutional support for parents and bringing them into the care centres and early classrooms.
- Programmes that merely encourage parents to work with their children at home (i.e. without direct support or skills training), or seek to improve parent–child relationships appear to be ineffective.

CHAPTER ONE – BACKGROUND

1.1 Research background

Closing the social class achievement gap or ‘poverty gradient’ in education is a prominent policy reform issue in the UK, as it is in many other developed countries. Considerable money has been spent on this, several relevant research studies have been financed and completed, and many strategies/interventions have been planned and conducted to try and overcome it. Unfortunately, the research has so far been largely deficient in design, and the interventions based on the research have often been unwarranted. Indeed, these interventions may even be harmful. It is unethical and inefficient to base real-life approaches on a clearly incomplete picture of available evidence or on poorly conducted studies involving flawed designs. For example, there is currently a plethora of local and national initiatives in the UK to try and improve educational outcomes for disadvantaged families by changing the aspirations, attitudes and behaviours of children and their parents. Recent studies have shown that these initiatives have no real evidence-base (Gorard *et al.* 2011) and could be based on wrong assumptions about the low aspirations of pupils and parents from poorer families (Kintrea *et al.* 2011) and indeed about their expectations and motivation (Schwinger *et al.* 2009; Bettinger 2010). The real challenge is not so much about raising aspirations or improving motivation, since these do not in themselves lead to enhanced attainment at school; rather, policy and practice needs to be directed at the most effective ways of assisting disadvantaged pupils to achieve those aspirations.

A series of systematic reviews of evidence on the role of schools, teachers, individual learners and others in producing improvement attainment and educational participation have shown some approaches to have promise, while many others present no promise at all (Gorard *et al.* 2011; Gorard and See 2012; See *et al.* 2012; Gorard *et al.* 2013). One of the generic approaches that showed promise was the further engagement or involvement of parents in their children’s education. In a review of individual learner and parental behaviours and attitudes, enhancing parental involvement was found to be the only

intervention with evidence of a full causal model leading to improved attainment (Gorard *et al.* 2011). More recent research by the Joseph Rowntree Foundation has again suggested that focusing on parental engagement can help young people from disadvantaged background achieve their aspirations (Menzies 2013). The role of parental involvement has previously been suggested as an important contributory factor in children's level of attainment in school. In 2010, the Schools White Paper for England outlined the coalition government's strategy to raise attainment of disadvantaged children and narrow the achievement gap (Department for Education 2010). Following this, the Field Review on Poverty and Life Chances made a number of recommendations, specifically identifying the importance of the role of parents in the early development of children (Field 2010).

Successive large-scale studies have shown a strong association between parental involvement and school outcomes across all age ranges (Cooper *et al.* 2010; Department for Children, Schools and Families 2008). A recent synthesis of nine meta-analyses confirms the positive relationship between parental involvement and academic achievement across different age ranges and ethnic groups (Wilder 2013). Many of these studies highlighted the important role of parents in children's education, but none were able to identify the active ingredient for successful programmes and for different age groups of children. Almost all the evidence cited in the DCSF (2008) report (Department for Children, Schools and Families) was based on studies of association or passive research such as reviews or meta-analyses of reviews. What these studies could not do was specify the more precise parameters of the most successful and promising interventions that might easily improve attainment at school for the most marginalised and the most disadvantaged young people. These interventions need to be tied clearly to age and stage, and be more precise about 'dosage' and any protocol for delivery than they are at present (Nye *et al.* 2006). It is, therefore, too early to test any specific approach. Instead, the next step is to identify and develop the most promising parental involvement interventions for children in different phases of schooling. To achieve the first part of this in this new review we conducted a much more targeted synthesis of intervention studies worldwide, to identify the common attributes of those that have the best chance of success. Success here is interpreted quite narrowly in terms of learning and attainment, or success in school. Previous work has also considered a range of possible or wider outcomes, including participation and subsequent occupation. These have not been found to be strongly linked, in any direct manner, to early parental behaviour. They are therefore ignored for the purposes of this review. Gorard *et al.* (2011) considered work relevant in any way to a potential causal model (including correlations and theoretical explanations). Leaving all of these complementary issues to one side, this new review will only seek evidence relevant to identifying effective interventions to improve parental

involvement that will have a direct and measurable impact on child's attainment. All else is excluded.

This new review was therefore not chiefly set up to be about whether parental involvement programmes work, for there was already some evidence that they can do. Rather it was intended to be about identifying the most efficacious programmes for different age groups of children, and the promoting and inhibiting factors in implementing such programmes. The review considers all aspects of parental involvement programmes including those that are aimed at motivating or enhancing parental engagement, but not parent-initiated involvement. This is because the intention is to identify strategies that schools or government can employ to engage parents in such a way that would make a difference to the outcomes of children from disadvantaged backgrounds. For these reasons, the review includes only those studies where there is at least an attempt at robust evaluations of interventions, such as randomised controlled trials or quasi-experiments that have pre- and post-test comparisons of outcomes and comparison groups.

1.2 Definitions of terms

For the purposes of this review, the term 'parent' should be taken to include foster parents, carers and responsible adults in any form of family structure. We use the term 'parental involvement' and 'parental engagement' synonymously although in some commentaries the two terms are understood to represent the two ends of the continuum from parental involvement with schools to parental engagement with children's learning (Goodall and Montgomery 2013). This is because our review looks at all aspects of parental participation in their children's learning. The review thus considers the involvement, behaviour or activities of parents, from pre-school interaction with their toddlers to understanding of and involvement with their children's secondary schooling. Possible indicators include, but are not restricted to:

- parents own reading and reading to children
- parent's interest in child's schooling (e.g. help with school work, subject choice)
- parental involvement in child's school life (e.g. PTA, child's extra-curricular activities)
- parental motivational practices (e.g. encouraging children to be persistent in school work)
- parents' encouragement for post-compulsory education participation
- family investment or participation in education of children (books, tuition, computer and internet).

The main outcomes of interest include school readiness (such as being able to count from one to ten, read letters of the alphabet, or identify shapes), cognitive development, and performance on standardised tests (such as Key Stage assessments).

Children and young people are deemed 'disadvantaged' by social and economic factors such as lack of parental education, low family income, receipt of benefits and/or free school meals, other indications of problems within the family, living in care, and living in areas of high deprivation.

These outline definitions were used to generate search terms for the appropriate electronic databases.

1.3 The review

The original and inter-related research questions for this new review were:

- Which interventions are most effective in enhancing early and subsequent parental involvement in the education of children from disadvantaged backgrounds?
- What are the key generic elements of these successful interventions for different phases of schooling?
- What are the main barriers to the implementation of these interventions?
- How may such barriers be overcome?
- What could schools and other key stakeholders do, in consequence, to improve the outcomes of currently disadvantaged children?
- What are the steps by which these interventions can be engineered into practical cost-efficient applications for policy and practice?
- What further specific research needs to be undertaken as a matter of urgency?

1.4 Structure of the report

Chapter Two of this report describes the methods used to find, assess, and synthesise the studies presented in the review. Chapter Three summarises the desirable characteristics of the studies sought, and some generic characteristics of those found. Chapter Four describes in some detail the best intervention studies found and considered to be medium or near medium in quality of evidence. Chapters Five to Eight then present the results for interventions involving pre-school, primary, secondary and all-ages of children respectively. The implications and conclusions, addressing the research questions above, appear in Chapter Nine. All references cited in this report are included. The Appendices focus on studies that have been excluded from fuller consideration, the reasons for exclusion, and present some extended examples as illustrations.

CHAPTER TWO – CONDUCTING THE REVIEW

This chapter describes how the relevant studies were identified for this new review. This will help readers to understand the scale of the undertaking, and would allow other researchers to update or extend the search.

2.1 Identifying the studies

The information retrieval tasks for this new review were largely based on the guidelines established by the UK EPPI-Centre (Evidence for Policy and Practice Information and Co-ordinating Centre). Evidence was sought through the following means – advertisements for evidence, proactively contacting key email lists and organisations, systematically searched journals, bibliographies and websites, systematically searched electronic databases, Google Scholar, references in identified studies, and literature already known to the reviewers from previous work in the field. The bulk of material came from a search of the main educational, sociological, psychological databases and medical databases. The search was as inclusive as possible in identifying a wide range of both published and unpublished literature (such as dissertations).

Electronic searches and databases

The major search began with 12 electronic databases. These included the main educational, sociological, and psychological databases – ERIC, PsycInfo, ASSIA, Australian Education

Index, British Educational Index, Social Services Abstracts, Sociological Abstracts, International Bibliography of the Social Sciences, and ProQuest Dissertations and Theses. The latter is especially important because experience shows that it holds the majority of the grey literature readily available, which reduces the file drawer bias, and it also holds many randomised controlled trials (RCTs). Widening the search to include medical databases such as PsycARTICLES, MEDLINE and the Cochrane Library initially produced over 30,000 hits. A sample showed that the vast majority was not relevant to the topic, and the relevant ones were already duplicated in the other databases anyway.

The inclusion criteria were:

- published between 1990 and 2012
- published or reported in English
- a report of research describing a parental involvement intervention
- an attempted robust evaluation of a parental involvement intervention
- relevant to learning or attainment outcomes
- the attainment results are published
- not solely about promoting parental involvement
- solely about attitudes of parents or teachers to parental involvement interventions
- about children educated in mainstream settings (and not solely about children with specific learning difficulties)
- not about other parental behaviour such as school choice or parenting style
- not about specialist interventions in institutions other than schools
- not handbooks and manuals for interventions.

The search terms (keywords such as 'parent' or 'mother') were refined over a series of searches, and adapted to the requirements of each database. The search was limited to studies published in English between the years 1990 and 2012. The search ended on 31 May 2012, so any studies published after this date would not generally be included. The search syntax for all databases generally included the following terms:

((parent* OR mother* OR father* OR carer* OR caregiver* OR guardian*) AND (attainment* OR achieve* OR "school outcome*" OR "key stage*" OR exam* OR qualification* OR "school readiness" OR "test score*") AND (trial* OR experiment*

OR "instrumental variables" OR "regression discontinuity") AND (engage* OR involve* OR "parenting style*") AND (child* OR school))

Table 2.1 shows the search syntax for each database and the number of reports retrieved.

Table 2.1 Databases and citations retrieved (n = 35,025)

Databases	Search syntax	No. of hits
ASSIA, ERIC, Sociological Abstracts, Social Services, International Bibliography of the Social Sciences, ProQuest Dissertations and Theses A and I (6 databases)	((all(parent*) OR all(mother*) OR all(father*) OR all(carer*) OR all(caregiver*) OR all(guardian*)) AND (all(attainment*) OR all(achieve*) OR all("school outcome*") OR all("key stage*") OR all(exam*) OR all(qualification*) OR all("school readiness") OR all("test score*")) AND (all(trial*) OR all(experiment*) OR all("instrumental variables") OR all("regression discontinuity"))) AND (all(engage*) OR all(involve*) OR all("parenting style*")) AND (all(child*) OR all(school)))	1, 068
PsycInfo	((parent* or mother* father* or carer* or caregiver* or guardian*) and (attainment* or achieve* or school outcome* or key stage* or exam* or qualification* or school readiness or test score*) and (trial* or experiment* or instrumental variables or regression discontinuity) and (engage* or involve* or parenting style*) and (child* or school*))	533
British Education Index and Australian Education Index	((all(parent*) OR all(mother*) OR all(father*) OR all(carer*) OR all(caregiver*) OR all(guardian*)) AND (all(attainment*) OR all(achieve*) OR all("school outcome*") OR all("key stage*") OR all(exam*) OR all(qualification*) OR all("school readiness") OR all("test score*")) AND (all(trial*) OR all(experiment*) OR all("instrumental variables") OR all("regression discontinuity"))) AND (all(engage*) OR all(involve*) OR all("parenting style*")) AND (all(child*) OR all(school)))	48
TOTAL		1,649

2.2 Cleaning the dataset

Stage 1

The total of 1,649 reports was added to by 21 further studies from hand searching of journal and other sources. Once direct and other duplicates had been removed on the basis of titles, authors, outlets, and abstracts if needed, there were 756 distinct reports. The abstracts of these remaining reports were read, in order to exclude those that, despite the search parameters, did not meet the inclusion criteria.

This process was necessary because even though the parameters for inclusion were applied during the electronic searches of the databases, previous work on systematic reviews shows that the search is a 'blunt' instrument and will still tend to uncover a substantial number of studies not directly relevant to the topic, or reports that do not contain new research evidence. There were many studies on improving parental skills, which do not relate to improvements in school outcomes, such as parenting for new mothers, teenage mothers, mothers suffering from depression or for parents who are referred for child maltreatment. There were also many interventions or evaluations of interventions to improve parenting skills in themselves, or interventions of parenting skills that impact on the well-being and socio-emotional adjustments or behaviour of the child (reduction in drug and alcohol use), aspirations, motivations and self-esteem. Also there were evaluations of parenting intervention programmes (e.g. Asmussen *et al.* 2012) that evaluate the participation rates and the quality of the training provided, but not the impact of the training on children's learning outcomes. After reading the abstracts, 660 reports were excluded on these grounds, leaving 96. Some of these 660 studies are still discussed in this review, as they may be reviews themselves, or provide evidence on factors promoting or inhibiting parental interventions. In several reports, there were no abstracts or the abstracts were clearly deficient as summaries of the research reported. These were retained at Stage 1.

Stage 2

All of the remaining studies were ostensibly about interventions or evaluations of interventions to enhance parental involvement in their children's education, and to improve the children's learning or school outcomes. At this stage the full reports were skim-read by one researcher. Any studies now thought not to meet the inclusion criteria were then reviewed by the other three members of the research team for consensus. Further, in order to establish inter-rater reliability, all four members of the team independently reviewed seven

randomly selected reports to decide if they agreed on their inclusion or exclusion. A further 25 studies were excluded as a consequence, and three were not accessible (i.e. no copy was available even via inter-library loan). In total 28 studies were removed from the list, leaving 68 studies. Table 2.2 lists the remaining 68 reports, and classifies them by the approximate age or phase of the children involved. Appendices A and B list the studies excluded at each stage, and the main reason for their exclusion.

Table 2.2 List of research reports reviewed, classified by age of children involved

Across age (<i>n</i> = 8)	Pre-school and Kindergarten (<i>n</i> = 26)	Primary (<i>n</i> = 23)	Secondary (<i>n</i> = 11)
Brodsky, S. <i>et al.</i> , 1994	Bekman, S., 2004	Adadevoh, V., 2011	Balli, S. <i>et al.</i> , 1997
Campbell, F. and Ramey, C., (1994)	Boggess, R., 2009	Albright, M., 2002	Epstein, J., <i>et al.</i> , 1997
Everhart, B., 1991	Rhimes, V.P.C., 1991	Bradshaw, C. <i>et al.</i> , 2009	Garlington, J., 1991
Fraser, L., 1991	Calnon, R., 2005	Davis, J., 2004	Gipson, P., 1994
Hampton, F. <i>et al.</i> , 1998	Chang, M. <i>et al.</i> , 2009	Fiala, C. and Sheridan, S., 2003	Gonzales, N. <i>et al.</i> , 2012
Van Voorhis, F., 2011b	Dieterich, S. <i>et al.</i> , 2006	Goudey, J., 2009	Kincheloe, J., 1994
Williams, M., 2008	Fagan, J. and Iglesias, A., 1999	Herts, R., 1990	Ndaayezwi, D., 2003
Williams, P., 1998	Garcia, M., 2006	Kyriakides, L., 2005	Sirvani, H., 2007
	Harvey, J., 2011	Luce, C., 1993	Spoth, R. <i>et al.</i> , 2008
	Jordan, G. <i>et al.</i> , 2000	McDonald, L., <i>et al.</i> , 2006	Tsikalas, K. <i>et al.</i> , 2008
	Kagitcibasi, C. <i>et al.</i> , 2001	Morrison, T., 2009	Van Voorhis, F., 2001
	Kagitcibasi, C. <i>et al.</i> , 2009	Rasinski, T. and Stevenson, B., 2005	
	Klein, L., 1990	Reutzell, D. <i>et al.</i> , 2006	
	Landry, S. <i>et al.</i> , (2011)	Roberts, B., 2008	

	Mullis, R. <i>et al.</i> , 2004	Smith. K., 2000	
	Lonigan and Whitehurst, 1998	Sparkes Butt, M., 1995	
	Necoechea, D., 2007	St Clair, L, and Jackson, B., 2006	
	Ou, S., 2005	Steiner, L., 2008	
	Ou, S. and Reynolds, A., 2010	Topping, K. <i>et al.</i> , 2004	
	Pungello, E. <i>et al.</i> , 2010	Van Voorhis, F., 2011a	
	Reynolds, A. <i>et al.</i> , 2004	Villiger, C. <i>et al.</i> , 2012	
	Reynolds, A. <i>et al.</i> , 2011	Warren, P. , 2009	
	Sheridan, S. <i>et al.</i> , 2011	Wehrell-Chester, D., 1994	
	St Pierre, R. <i>et al.</i> , 2005		
	Starkey, P. and Klein, A., 2000		
	Stevens, B., 1996		

2.3 Data extraction

In total, 68 studies were assembled that were judged to be both relevant and research-related. These were the candidates for in-depth review and synthesis of their findings. They were empirical and described in sufficient clarity and contained enough information for us to make judgements about the conclusion and the quality of the evidence. The latter is an important caveat. These were all studies that reported relevant research. This does not mean that the research was of high or even medium quality (see Chapter Three).

Each included study was then data-extracted using the following template.

2.3.1 Overview

Brief description of the intervention and its aims. How the intervention works. There must be enough information to enable identification of key features of a successful intervention, if it works.

2.3.2 Method

Research design

- Is it a randomised controlled trial?
- Is it a quasi-experiment (no randomised allocation to control conditions)?
- Does it have a control and comparison group?
- Does it have pre- and post-test comparisons?
- Is it longitudinal, is it a cohort study or combination of some of these?
- How is randomisation or other allocation to groups carried out?
- Are the teachers, for example, blind to treatment allocation?
- Is participation voluntary?

Sample

- Size of sample
- Number in treatment groups and comparison groups
- What is the smallest cell size?
- How many of the original/intended cases did not take part in the study?
- How many recruited or who agreed then dropped out or whose data were not available or not reported?
- What age group and phase of schooling (e.g. pre-school, primary, secondary, across age range), or what is the age of the children participants?
- Was baseline equivalence between groups established?
- If cases were not randomly allocated to treatment condition, was there any attempt to ensure that the two groups were similar, in terms such as family background, teacher effectiveness, and home environment?

Outcome measures

- What are the outcomes and how are they measured?
- Is there a pre-defined primary outcome, or is there an element of 'dredging' for success?
- Academic achievement (subject area such as general literacy, language arts, reading, writing, oral fluency, maths, algebra, social studies or science)

- Are children assessed using teacher reported grades, parents/pupils' self-reported grades, teacher developed or researcher developed tests or standardised, criterion-referenced tests/commercially produced tests etc. (give the names of these tests if mentioned)?
- School attendance
- School engagement
- Retention (i.e. staying on in school)
- Post-compulsory education participation

Other possible outcome measures

- Behaviour (e.g. discipline referral)
- Attitude towards subjects/school/education
- Parental/pupils'/teachers' perceptions of the programme

Analysis

- What kind of analysis is carried out?
- Are there pre- and post-test comparisons?
- Is significance testing appropriate?
- Are effect sizes cited or calculable?
- How is the performance of treatment and comparison groups compared?

Results

- What are the major findings in terms of parental involvement causing changes in attainment?

2.3.3 Comments/Limitations

Comment on aspects of the study that might threaten or enhance the internal and external validity of the experiment. This could include size of sample, level of dropout, fidelity to treatment, quality of counterfactual, blinding, extraneous/confounding variables, other programmes going on that may have affected the results, misleading use of simple before and after figures, use of tests created by the same team as those advocating the intervention, and other conflicts of interest.

2.4 Method of assessing the quality of evidence

In addition to this relatively simple description of each study, the preparation for synthesis of the results also involved a judgement of the quality of evidence, based on that description. This started with a consideration of the clarity of reporting, and included judgement of the following factors.

Clarity of reporting

- Is the method described clearly enough for it to be replicated?
- Are all data reported, or did the author present only some results?
- If only a partial report, is there any indication that results have been 'cherry-picked'?
- Is more information needed in order for the conclusion to be convincing?

Based on the information obtained from the data extraction, an assessment of the research quality of each study was made using the following criteria (Gorard 2013).

Rigour of the study

- Given the information reported, what are the weaknesses of the study
- Is the number of cases adequate, was there large non-response, and were the comparator groups genuinely equivalent?
- Is the design suitable for the claims being made?
- Were threats to validity, such as demoralisation, Hawthorne effect, regression to mean, bias in treatment, and experimenter effect countered properly?
- Is the analysis technically correct?
- In general, are the conclusions drawn warranted by the evidence?

Assuming that the study description was clear enough to judge its rigour, and assuming that the rigour was sufficient for the study to be taken seriously, then the third issue is whether it is otherwise a fair test of the intervention being evaluated (Dusenbury *et al.* 2003; Rossi *et al.* 2004).

Fidelity and evaluation of process

- Was there monitoring to ensure that the intervention was carried out as recommended?
- Was the intervention carried out as proposed?

- Were the learning and attainment outcomes measured using standardised tests or something else?

Based mostly on the judgement of rigour, adjusted for clarity and fidelity, each study was then given an overall rating of trustworthiness ranging from low to high. Seven examples of these judgements were completed in parallel by all members of the research team, and two slight differences in judgement discussed and resolved. All subsequent reports that involved difficult judgements were cross-referred to at least one other team member.

2.5 Synthesis of evidence

The included studies were first classified by age groups and types of interventions to determine the types of interventions most relevant and also prevalent for each age group or phase of schooling. For this review we classified students into three age groups (Table 2.3).

Table 2.3 Classification by age group

Age	Year (UK)	Grade (US)	No. of studies
0–5/6	Pre-school/kindergarten	Pre-kindergarten/kindergarten	26
6–10/11	Primary school	Elementary school (grade 1–grade 5)	23
11/12– 15/16	Secondary school	Middle school, high school (grade 6–grade 10)	11
Across age			8

The most prevalent interventions were those for primary and pre-primary school-aged children. We then picked out the specific element of the intervention and categorised them according to themes, such as whether it involved parental training, parental reading or home–school partnership. It has to be noted that these classifications were based on arbitrary judgements. For example, parent–child reading and multiple component interventions for pre-school children often have an element of parental training too. In such cases the predominant element prevails.

For each study we also noted the reported impact and our own assessment of the effectiveness of the intervention. The reported impact of each type of intervention for each age group is summarised in a table (see Appendix C). Coupled with the assessment of

research quality, this was used to provide a summary of the number of different studies of each type, for each age group, with reported positive or negative/unclear impact, and a rating of quality. Each category is discussed separately in the findings (Chapters Five to Eight). It is important not to confuse low-quality studies with ineffective interventions. Studies are rated low because of weaknesses or flaws in the design. Therefore, it is of some urgency that some of these low-quality studies which show prospect be replicated with more rigour and with much larger samples. The following section describes how such rigour may be achieved.

CHAPTER THREE – JUDGING RESEARCH QUALITY

This chapter provides a brief justification for emphasising the quality criteria in judging the evidence of each study. It provides a guideline on what proper trials might entail and how future research in this area could be improved. The elements proposed are quite general, and are assumed to be relevant to other topics and fields of public policy research as well. However, it is necessary to repeat them here because they were largely absent from the studies located in the review.

3.1 Inconsistent definitions and outcome measures used

Reviews of research concerning the impact of parental involvement on children's school outcomes have previously reported quite mixed results. Some programmes are reported to be effective for younger children, but not for older ones, while for others the situation is the reverse (Williams 2008). Some interventions appear to have an effect on some components of certain ability tests but not on others. There are also studies suggesting that interventions, which focused on parenting skills and behaviour alone, have little or no impact on children's school outcomes (Hartas 2012). One of the main reasons for these mixed results could be the varied and inconsistent definitions of 'parental involvement' or types of parental involvement (Sénéchal and Young 2008; Jeynes 2012). Parental involvement can mean a wide range of things from parental behaviours, parenting styles, and parents' aspirations to parenting activities such as helping with homework and attending school activities. Another reason for confusion is the lack of any clear measure of parental involvement. Many studies have used parent self-report and/or student and teacher reports. Other reasons for lack of agreement could include differences in the duration and focus of the intervention, and the age group or school phase of the children involved. For example, a synthesis of 47 parent

involvement interventions for adolescents aged 12–17 (Terzian and Mbwana 2009) found that generally successful interventions were those that:

- develop skills (13 out of 18 worked)
- were therapeutic interventions that focused on family and teens (all 9 were effective for at least one outcome)
- focus on both parents and teens (21 out of 29 worked)
- provided at least five sessions (19 out of 20 worked).

On the other hand, programmes that offered only information with no practical training for parents were most likely to fail (only three out of 11 showed positive effects). Programmes that aimed to change behaviour, such as substance abuse (only seven out of 23) and reproductive health outcomes (none out of eight), and those to improve educational outcomes (one out of seven worked) were also less likely to succeed. Only community-based therapeutic interventions, such as Multidimension Family Therapy, were found to be effective on academic achievement. Home-based interventions, clinic-based therapeutic interventions and community-based interventions were either not shown to work or were shown not to work.

3.2 Influence of confounding variables

In many studies there was also little or no attempt to control the influence of other variables, thus making it difficult to conclude definitively that the programme works. For example, although one evaluation of school readiness programmes reported positive effects for literacy and numeracy skills, the results have to be interpreted with caution because of the limitations of many of the studies (Brown and Scott-Little 2003). Brown and Scott-Little did not isolate the different components of the complex programme evaluated, so it was not possible to judge whether it was the quality of the teachers, the small class sizes or improvement in parental engagement as a result of the intervention that were behind the reported improvement in children's outcomes.

3.3 Rigour

However, the main issue with research on parental involvement programmes is the lack of rigour in research design. In one review of parental involvement studies, Baker and Soden (1997) found that of the 200 studies they reviewed only three were truly experimental in

design. Most common were ex post facto or correlational studies ($n = 79$), while 16 were pre-experimental studies. The latter had either no comparison groups, or no randomisation of participants and no pre-test/post-test comparison of outcomes. Those that used a quasi-experimental design ($n = 13$) all failed to establish the baseline equivalence between the intervention and control groups. Although students may be matched on demographics and academic ability, other confounding variables such as differences in teachers, types of schools or school-mix, which also provide plausible alternative explanations for the differences in test scores, were not considered. Currie (2001), in her review of early childhood intervention programmes, found only seven that were randomised controlled trials. Among these are four very high profile ones: the Perry Preschool Project, the Carolina Abecedarian Project, the Early Training Project and the Milwaukee Project. These all involved random allocation of children to intervention and control groups and had relatively low attrition.

Another review of 20 studies on school readiness initiatives (Brown and Scott-Little 2003) also found that the majority of studies were pre-experimental or correlational (55%), and only one employed an experimental design, while eight were quasi-experimental studies. Henderson and Mapp (2002) reviewed the impact of school, family and community on attainment. Of the 51 research reports reviewed, only five were experimental studies, three quasi-experimental, four pre-experimental and the most common ($n = 20$) were correlational studies. Goodall *et al.* (2011), in a review of best practice in parental engagement for young people across a wide age range (aged 5 to 19), also notes the lack of 'robust' studies, 'too little to provide evidenced-based judgements about many of the key variables, or the relative effectiveness of work in different key stages of children's development' (p.12). A bibliography of research on the impact of parent/family involvement on student outcomes by Carter (2002) identified 86 studies (20 were duplicates). Of these only four were experimental studies with comparison groups and pre- post-test comparisons. Of the four, one had a sample size of only eight children, and the outcomes were based on informal assessments by teachers (Faires *et al.* 2000). Another reported non-academic outcomes such as participation in learning activities, developing responsibility, level of parental-child interaction. Moreover, these outcomes were based on participants' self-report (Van Voorhis 2001). Only two were experimental studies with comparison groups. The rest were ex post facto or correlational studies or reviews of research.

The use of the word 'impact' in titles is often quite misleading for the reader who assumes that the studies involved designs that would and could establish causal impact. Causation is a complex issue (see Gorard 2013). Nevertheless for public policy interventions to be

recommended as causal in nature they must have been tested rigorously in real-world conditions. There are a number of robust alternative designs, that can be used when appropriate, such as regression discontinuity, but by far the simplest and most powerful way to demonstrate the causal nature of an intervention is to provide the intervention for one group of cases, and not provide it for a directly equivalent group. This is the basis of a randomised controlled trial (RCT). An intervention can be said to have demonstrated likely impact if the following conditions apply.

The number of cases (students, families or schools) must be large, both overall and in each group for the RCT. Lehr's approximation suggests that around 400 individual cases are needed in each group (treatment and control) in order to have reasonable confidence of uncovering an effect size of 0.2 (a small effect of the kind often found in successful educational interventions). Anything less, and the likelihood of spurious differences (created by sampling or the randomisation to groups) is unacceptably high. This means that the simplest educational trial with only two groups, and no solid prior evidence of an effect size substantially larger than 0.2, will require around 800 cases, as a minimum.

The cases must then be allocated to either receive the intervention being trialled or not, and this must be done completely at random. There must be no subversion of the randomisation by well-meaning individuals trying to give the intervention (or not) to specific children. There must be no dropout after randomisation, because this introduces bias. The cases (schools, teachers or families) may be demoralised in some way on finding out which group they are in (usually, but not always the control). There are many ways to assist in preventing this. One is to use a waiting-list design so that all cases will receive the intervention, and the randomisation merely determines the order in which they receive it. In reality, a small amount of dropout is probable (a student may naturally move home and therefore school during the period of the intervention). This must be reported, along with the reasons if known, and appropriate steps taken to protect the study from bias. These steps could be analytical, such as using intention-to-treat, or procedural, such as following up such cases and testing them anyway, or both. If dropout is small, has an obvious explanation, and is not strongly weighted to one group, then the threat to the study is minimal.

The procedures of the intervention and its evaluation should ideally be 'blinded', meaning the intervention is delivered and evaluated by individuals with no knowledge of which group is which. This is the basis for the use of a placebo treatment in medical trials. Full blinding is harder in educational trials, which makes it even more important that the evaluation has no conflicts of interest. The evaluation must be conducted by individuals with no concern for

whether the intervention works or not, but concern only for finding out. Similarly, the outcome measure used, such as a test of student learning, must be standardised and independent of the innovators of the intervention. Ideally, the outcome should be something that is already widely accepted and valued. All other threats to the validity of the study should be monitored, including any ways in which the intervention group is treated differently to the control, other than in terms of the pre-specified intervention. The intervention itself should be as simple as possible. A parental involvement intervention coupled with a breakfast club, summer enrichment activities, and a new curriculum, for example, would make it impossible to judge which if any of these components was effective.

After the intervention has been completed for one large group but not the other, both groups should be assessed or measured for the single pre-specified outcome that the intervention was intended to improve. If the average difference between the groups is indistinguishable from zero, or if the treatment group has a lower average score, then the intervention has been unsuccessful. Otherwise, there is prima-facie support for the intervention being the beneficial cause of the difference. The larger the difference (effect size) and the better the procedure went (dropout, diffusion, fidelity to treatment etc.) then the more convincing is the causal claim. However, even the most powerful study cannot sustain the argument for cause on its own. There must be replication and agreement over a number of such trials, hence one reason for this new review of evaluation evidence. There is also an issue of generalisation or rollout. The participants in any study are almost always, by definition, volunteers. This can limit the applicability of even the most powerfully evidenced intervention. Parents who volunteer for a parental involvement intervention may be different in several ways from parents who refuse. This level of wider applicability of the results is another feature noted for each study.

3.4 Inappropriate method of analysis and synthesis

Despite some high profile and fashionable reports worldwide that have attempted to meta-analyse or even summarise several meta-analyses of findings, this is generally done in error. The two most common mistakes, which lead to misleading advice for practitioners, are to conflate active and passive research designs, and to use methods based on random sampling theory to synthesise evidence from non-random cases. As this review has portrayed, there is a clear difference between a large randomised controlled trial and a comparison of the results of volunteers with those who refused to take part in an intervention. Their so-called 'effect' sizes are not comparable and so cannot be easily synthesised. In fact, we would argue that the latter should not be used in any synthesis, and

since we found no large RCTs there is nothing much to synthesise anyway. The second issue is equally problematic. Over half of the studies reported in this review, and many others excluded on other grounds, used significance tests with non-random samples not randomly allocated to groups, or they allocate school classes randomly and then analysed individual student results. In fact, it is rare to find a study that analyses its results correctly. Most studies do not report standard effect sizes. Traditionally, this means that effect sizes are estimated from significance test results before meta-analysis. This approach simply accepts and propagates those initial errors through synthesis. Good mixed with bad is bad. We should not conflate probabilities from non-probability samples with those from randomly allocated groups. In fact, we should reject the former as the nonsense they so patently are.

3.5 Gradient of evidence

In reality, not all studies will have all such features, but it is important to realise that there is a gradient of evidence. As soon as one of the requirements listed above is violated, the security of the conclusions drawn from any study will weaken. For example, some studies do not use straightforward individual randomisation of all cases to groups. Sometimes there is stratification or clustering of individuals to take into account. This then weakens the warrant for the conclusions slightly and/or requires a considerably larger number of cases. Using only a post-test with a large sample size relies on an unbiased allocation of cases to groups. This has the advantage that it reduces error propagation in the results. Many studies also use a pre-test, so that both groups are tested twice and it is the gain scores that are compared. This does increase the danger from initial errors in the data, and allows for practice effects, but in reality the substantive results of both designs will be the same. Where pre-tests are used because the sample size is small and so the initial equivalence of the two groups is in doubt, the danger comes largely from compromising on the scale needed, not from the pre-testing itself. However, another reason for conducting this new review is to see if there are numbers of isolated smaller trials of the same interventions, conducted well but not large enough in themselves. If so, their results can be aggregated quite simply, and they become part of a larger aggregated 'trial'.

Other compromises on the suggested requirements above have more serious implications for the security of studies. Allowing more than one outcome, or not being precise in pre-specifying the required outcome, lays the study open to the charge of dredging. Matching cases across groups is much more dangerous than unbiased randomisation. Whereas randomisation creates an unbiased distribution of all known, unknown and unknowable characteristics, matching can only be done in terms of known characteristics. An initial

difference between the groups is always a plausible explanation of any differences in outcomes, when using matching of any kind. Having no comparator group at all and relying solely on before and after scores is even worse. Threats are well known and include regression to the mean and Hawthorne-like effects. Worse again is to have no comparison at all (actually the bulk of published educational research on any topic). Nothing of any use to a causal argument can be drawn from such a poor design. It is clear that the impressions of participants in trials bear no relationship to the eventual outcomes. Such process evaluation has a different purpose, and cannot be used to argue that an intervention works or not.

The template for good causal evidence proposed here as desirable is used to assess the quality of the studies in this new review. A study that has all desirable features would be good (as good as is possible in real-life research). A study that compromised on a few of the lesser requirements would be medium quality. A study that compromised on one or more of the more important features would be low quality – anything worse than this has already been excluded from consideration (see Chapter Two).

Summary

- This chapter explains why studies included in the review must meet the minimum quality criteria if the results of their findings are to be accepted.
- Failure to do so has important ramifications in terms of policies that can affect the lives of young people and public expenditure.
- The quality of evidence presented by each study was judged according to rigour, which was assessed by whether
 - the study has a large enough sample
 - there is a comparison/control group
 - there is randomisation to groups
 - there is dropout after randomisation
 - there is control for confounding variables
 - the study uses appropriate method of analysis and synthesis of findings.
- Studies were also judged by quality of reporting, which was assessed by whether
 - the study was clearly explained for it to be replicated
 - the study reported all the results or did it use selective reporting (i.e. reporting only positive or favourable results).
- Another issue with quality is the common practice of conflating active with passive research designs, using significant testing for non-randomised samples and converting significance levels to effect sizes thus propagating the initial errors.
- Studies that have all the desirable features would be rated good, studies that compromised on a few of the lesser requirements were considered of medium quality, and studies that compromised on one or more of the more important features would be rated low quality – anything worse than this would have already been excluded.

CHAPTER FOUR – THE MOST PROMISING STUDIES

Using the ideas from Chapters Two and Three, no study was found and agreed to be of good or high quality, while also relevant to this review. Most had major flaws, such as a sample size that was entirely inadequate (see Chapters Five to Eight), while others involved major compromises in design, such as the use of matched comparators rather than randomisation. Only eight studies were agreed to be of or near medium quality, and are described in this chapter. All other studies were deemed to be of low or very low quality, and are described in Chapters Five to Eight.

The best eight studies present a mixed and far from encouraging picture for the success of parental interventions. The weakest of these is of a relatively simple school-initiated parental intervention, but the results show that the control group made greater progress (Herts 1990). Five slightly stronger studies did show positive results and did include parental involvement but also school-based, health and even some economic interventions in the same bundle (Reynolds *et al.* 2004; Ou 2005; Ou and Reynolds 2010; Reynolds *et al.* 2011; Gonzales *et al.* 2012). The other two studies were also multiple and complex interventions with a component of parental involvement, but both of these showed that the parental involvement component was ineffective or even harmful (Bradshaw *et al.* 2009; Villiger *et al.* 2012). The study by Villiger *et al.* is about training parents not to interfere with their children's learning. This means that interventions to improve attainment by enhancing parental involvement are less promising than appeared to be the case when this new review was commissioned. The remainder of this chapter describes these interventions and their outline results. As two of the studies (Ou and Reynolds 2010 and Ou 2005) used the same data, with the later study segregating the results by gender, we discussed the two studies as one. Hence, only seven studies were described instead of eight.

4.1 Studies with positive outcomes

Reynolds *et al.* (2004) evaluated the Chicago Child–Parent Center (CPC) Program, which is a federally funded pre-school intervention programme for families in high poverty areas in Chicago. The intervention includes parental training with a child-centred focus on developing reading and language skills. However, it also included teacher-directed whole class instruction, small group activities, field trips and play, low child to staff ratios in kindergartens, outreach activities including home visits, staff development activities, plus health and nutrition services. This complex intervention took place three hours per day five days per week over nine months with a six-week summer programme, plus the provision of

'continuing services'. The programme is described in more detail below. Children were tracked through to age 19. Originally there were 989 children in the CPC Program in 20 centres, and 550 children from five randomly selected programmes without CPC. The sample dwindled to 88% of children in the original CPC Program and 85% of the control children. The sample consisted mainly of African Americans. The researchers claim that path analysis shows that the CPC Program had positive effects on attendance and completion of high school. However, because of the multiple components of the CPC Program it was not clear which aspects of the programme were specifically related to parental involvement and it is therefore hard to isolate the specific programme effects. The researchers were wrong to use significance with these non-random groups. For this review, the study is rated as near medium.

Ou (2005) used the same data but involved structural equation modelling (not path analysis) to look at the long-term effects of the CPC Program on children's cognition. CPC children achieved higher scores on the Iowa Test of Basic Skills (ITBS), had lower grade retention and higher school achievement and grade completed than control children. This study has the same problems, as Reynolds *et al.* (2004), and the later analysis of the same data separately for male and female (Ou and Reynolds 2010).

Reynolds *et al.* (2011) examined the long-term effects and the programme dosage of the Chicago Child-Parent Center (CPC) Program on children's outcomes. The Chicago Child-Parent Center was opened in 1967 with funding from Title I of the Elementary and Secondary Education Act of 1965, to serve families in high poverty areas in Chicago not supported by Sure Start or other similar programmes. The programme was originally meant for pre-school children up to 3rd grade and was run within pre-school centres. These centres are now part of the Chicago Public School system. The programme provides educational and family support services to economically disadvantaged parents and their children aged three to nine in neighbourhood schools. The philosophy behind the programme is that providing an early stable school-based learning environment during pre-school where parents have an active role in their child's education can help promote school success. The programme aims to develop children's skills in reading, math, and communication through a broad spectrum of classroom and parent activities, and field trips. To be eligible for the programme, the child must be living in the neighbourhood that receives Title I funding. Parents must commit to volunteer at the CPC on a weekly basis. Each Child-Parent Center is run by a headteacher. The centres run school-community outreach activities and health services to recruit other families in need. In every CPC there is also a staffed parent resource room, and so the programme requires active parental participation. The emphasis

is on a child-centred and individualised approach to social and cognitive development. The school-age element of the program includes reduced class sizes, continued parent involvement activities, and an enriched classroom environment for developing reading and math skills.

For the evaluation, data were taken from the Chicago Longitudinal Study comparing children in the CPC Program with those in an alternative kindergarten intervention (e.g. Head Start and home care) including those who were eligible for CPCs but enrolled in different classes. The study used a quasi-experimental design, with groups merely matched on age, eligibility and family poverty. Follow-up data for educational attainment and SES (at age 28 years) were available from 1,400 participants (around 90% of original sample). The intervention students were the whole cohort of children who completed pre-school and kindergarten in all 20 CPCs over six years ($n = 989$). Comparison students were from five randomly selected schools that were involved in an alternative kindergarten intervention (e.g. Head Start and home care) including those who were eligible for CPCs but enrolled in different classes ($n = 565$). Outcomes, once the children were aged 28, included educational attainment, high school completion (high school diploma or equivalent), SES, health status and behaviour, crime and justice system involvement. Data were collected from administrative and survey data and other sources (e.g. health, education and crime records). The study found that children in the programme whether at pre-school or school age participation had higher levels of educational attainment compared to the comparison group (more likely to stay on in school, more likely to graduate on time). Pre-school participation in the programme had the most consistent and lasting effects for a number of outcomes, including education, SES, health behaviour, and crime. The effects of school-age participation and extended intervention were limited mainly to education. The findings of this study suggest that home support had positive effects on the academic outcomes of children whether participation was at pre-school or school age. The results are reasonably impressive given the scale of the sample (1,400 children) and that comparisons were made with other pre-school interventions such as Head Start. This study was rated medium on weight of evidence. The rating could have been higher if not for lack of clarity in reporting, the lack of effect sizes, and the invalid use of statistical testing with non-randomly allocated groups.

Gonzales *et al.* (2012) examined the effects of Bridges to High School/Puentes, a family-focused preventive programme the aim of which was to reduce problems associated with transition to secondary school. This is a nine-week multicomponent programme in the 8th grade, which combines parent and child education with family support. It involves a parenting intervention, adolescent sessions and family sessions, plus two home visits (one

pre and one during intervention). Parenting sessions were aimed at enhancing parenting skills using positive reinforcement, reducing harsh parenting, monitoring and appropriate discipline. Bridges to High School also aims to increase family cohesion, strengthen co-parenting alliance in two-parent families, reduce parent–adolescent conflict, and help parents understand school expectations and improve parent–teacher communication. In adolescent sessions, students were taught coping strategies, managing interpersonal and school problems, exploring goals and motivations and balancing family relationships with other obligations/interests. Family sessions providing structured opportunities for mutual understanding, enjoyment and communication, and to practice skills learnt in parent and adolescent sessions. The leaders of sessions were trained in the intervention, for 45 hours beforehand, and five additional hours per week during the intervention. A school liaison officer was available to support families. For fidelity of treatment all intervention sessions were videotaped and independent raters rated adherence to the protocol. Control parents and children, on the other hand, attended a one and a half hour workshop to discuss barriers to school success. They did not receive any training on parenting or coping skills, apart from some leaflets.

Participation in the programme was voluntary and those who agreed were randomly allocated to experimental ($n = 338$) or control group ($n = 178$). The authors reported positive effects on students' grade point average (GPA). Students with low baseline GPAs had higher GPAs than the control group after one year ($d = 2.97$). However, they nowhere report the actual average scores for each group, nor the basis for calculating the effect size. The results are generally poorly presented. Attrition was 27%, which is considered quite high, reducing the control group to around 130 students (and slightly fewer co-operating parents). It is difficult to isolate the active ingredient because there are so many aspects to the intervention including parental training, home visits and adolescent behaviour training. This makes it difficult to replicate. The outcome measures are heavily dependent on self-reporting scales with less emphasis on independent observation/records. Nevertheless, this study must be considered of near medium quality, partly because of its scale and because individuals were randomised to groups.

4.2 Studies with unclear or negative outcomes

Herts (1990) evaluated a school-collaborated programme involving parents helping their children to read at home using prescribed activities. The aim of the intervention was to help enhance children's vocabulary and comprehension, as well as their self-esteem. Parents in the experimental group attended one training session, where they had to commit to a 14-

week parental involvement programme. At the sessions they were given materials, and discussed the topics in these handouts. The topics were about issues like building self-esteem, how to support their child in their reading, how to help their child to cope with stress and to create a stress-free environment for the child. Parents also received vocabulary and comprehension exercises and were shown, using role play, how to reinforce reading skills at home. In addition, parents were given extra learning activities to work on with their children at home. These activities were aimed at reinforcing children's skills in vocabulary and comprehension. Children brought prescribed activities home to be completed and returned them to school each week, and parents had to commit 15 minutes to working with them on this.

The study was a quasi-experimental design, involving 3rd-grade teachers in five schools in one US district. In each school some teachers and their students were in the 'treatment' group and others were in the 'comparator' group. Originally, there were 117 students in the treatment, and this dropped to 99 by the end due to movement between schools. There were 113 in the comparison group, and this dropped to 96. Therefore, at 15%, the dropout was substantial but similar in scale across the two groups. The report states that teachers from the five primary schools were 'randomly selected to participate'. It is not clear how the children or teachers were allocated to treatment groups. Therefore, it is not clear that the individual student-level significance testing that is presented for analysis is appropriate. For these reasons the study is rated nearly medium quality, as it is also either larger than or better designed than the other studies presented in Chapters Five to Eight. The main problem is that it is incompletely and poorly described. The results showed no advantage for the treatment group in reading attainment, as assessed by the standardised Gates-MacGinitie Reading Test (GMRT). In fact the comparison group made greater improvements than the treatment children ($ES = -0.20$). There is no evidence here that such basic training and involvement of parents is beneficial.

Bradshaw *et al.* (2009) compared a Family–School Partnership (FSP) programme with a classroom centred intervention. The Family–School Partnership programme was aimed at improving parent–teacher communication and providing parents with teaching and child behaviour management strategies. It involved using trained teachers and health professionals to train parents in teaching and behaviour management skills including literacy and numeracy skills. It started with a three-day seminar for teachers and relevant school personnel, training them in parent–teacher communication and partnership building. Teachers received a training manual and videotape training aids, plus additional support after the training. Programme experts visited schools during the intervention to supervise

and offer feedback. There were nine parent workshops run by the 1st grade teachers, social workers and school psychologist, with weekly home–school learning and communication activities.

The Classroom Centred or Classroom Focused intervention is a two-pronged approach aimed at improving behaviour and learning, using activities, like role playing, reading aloud, good behaviour games and critical thinking activities in the classroom. It combines the Good Behaviour Game with an academic focused curriculum. The Good Behaviour Game is a classroom management strategy to reduce disruptive behaviour. One of the concepts used is group/peer encouragement. In the classroom children are divided into groups or teams and positive behaviour of the group rather than the individual is rewarded. This is to get children to encourage each other to behave in a positive manner. Any team member displaying unacceptable behaviour will have a check mark on the chart. At the end of a specified period (starting with ten minutes at the beginning of the year to one whole day), teams with four or fewer checks are rewarded. These started as tangible rewards, such as stickers and activity books and then moved to intangible ones such as being given special duties like designing bulletin boards. Gradually rewards were phased out. The Good Behaviour Game is supplemented by weekly class meetings chaired by the teacher. This is to build social problem-solving skills. The academic-focused curriculum aims at improving students' reading, writing, maths and critical thinking skills through activities like interactive read-aloud periods, journal keeping, role playing, dramatisation of written work, self-reflection and the use of the Mimosa math program which uses clock faces and pattern blocks to solve maths problems. These activities are supplementary to the existing curriculum. Teachers in the programme received 60 hours of training before the implementation. They also received monthly supervision and feedback from programme experts during the year.

The evaluation was a longitudinal study involving a total of 678 students from nine schools. The allocation to groups was random at class level, with three classes from each school, one of each in one of three groups who were tracked from 1st grade to age 19. Each group received one of the programmes or acted as a control. The study reported relatively low attrition (84% of initial students remained at 12th grade). Relevant outcome measures were attainment in grades 1 to 12 measured using the Kaufman Test of Educational Achievement (grade 12, Reading and Math), and College attendance at age 19 based on high school graduation records. The researchers report that regression analysis showed the classroom intervention had positive effects on reading and maths performance, but not for high school graduation. There was no overall difference on any outcome due to the family intervention.

One concern with this study is that classes within the same school were allocated to one of three groups, so there is a possibility of contamination. Teachers were not blind to allocation. The researchers were also wrong to analyse the class-level groups as though they were individually randomised. Nevertheless, this study is of reasonable size, and is given a medium rating. The training and continued monitoring of the parental involvement element appear higher quality than in the Herts (1990) study, but there was still no beneficial impact on student attainment or progression from the parental involvement.

Villiger et al. (2012) also looked at an intervention that combined a home and school programme for 4th grade students in Switzerland. This LiFuS programme comprised two components, based on Self Determination Theory and Interest Theory. The first involves training parents to support their children at home with their reading homework. The school component involves training teachers in cooperative learning activities to enhance children's reading motivation and comprehension. The whole programme lasted 28 weeks (about one school year).

The Home Reading programme was for 20 minutes three times per week, and emphasised supporting the child's autonomy in reading, by avoiding controlling and interfering behaviour and using autonomy-supportive strategies. Parents were told not to stay around to listen or interfere with the child's reading. The child should be allowed to read silently at his/her own pace. Parents were told provide reading materials such as dictionaries and to remain nearby to answer questions. Instead of giving the child the complete solutions to queries, parents were instructed to provide strategies for the child to use. Parents needed to familiarise themselves with three strategies (background knowledge, predicting and summarising) to facilitate pre- and post-reading discussions. Before implementation, parents attended two training sessions each lasting three hours, held in the evening in the child's school. In the first training session, parents were shown a video demonstrating the theoretical aspects of the homework intervention. In the second training session, the children participated together with their parents. Parents practised strategies with their child on how to support their child in their reading homework in a semi-authentic homework situation. These training sessions were conducted by project managers and staff members with knowledge of literacy instruction using a detailed script. Parents were supported throughout the intervention with personal coaching. In addition, they received instructional booklets with the content of the training session (to refer to whenever they needed). Children were given a checklist to help them remember the steps of the strategy used.

The School Reading Programme involved 100 minutes per week on programme-related tasks. There were two cooperative learning settings or scenarios (alternated every two weeks). Programme teachers attended two training sessions totaling six hours. Project staff knowledgeable in literacy instruction delivered the training. In the first session teachers were given a detailed description of the programme and a summary of its content. Sample worksheets were given to teachers to use in the classroom. Throughout the intervention there was ongoing support for teachers, including two personal coaching sessions given to teachers in the classroom. The second session was a class meeting where teachers discussed questions about the programme and their satisfaction with it. A third personal coaching session was also available if necessary. Following these sessions were two group coaching sessions where teachers gave their feedback and discussed with the project team difficulties and successes regarding implementation. In addition there was a support helpline for teachers, and programme organisers were on hand to answer any questions that arose.

The intervention itself had two parts, question-generating and a Teams-Games-Tournament. Children of mixed ability worked in teams of three or four on short texts distributed by the teacher. As a group they verified their comprehension of the teacher's introduction of a topic (peer tutoring session). This is known as the Teams-Games-Tournament. Then individually they generated questions based on the text and challenged their classmates from other teams of comparable ability with the questions about the text. Points were awarded for correct answers and credited to the group. Teachers used both narrative and expository texts. The narrative texts were taken from a range of genres from children fiction. Expository texts were taken from well-known children's magazines and other non-fiction literature.

A total of 713 children in the 4th grade took part in the study. These were divided into three groups: school intervention group ($n = 244$), school/home intervention group ($n = 225$) and a control group ($n = 244$). The intervention classes were recruited through interested teachers and school officials. The control group was merely matched with the intervention groups, and known differences between the groups controlled for. Pre-test, post-test and follow-up tests were compared for reading motivation, reading comprehension and teachers' reported reading grades. Regression analysis shows that although all students' reading enjoyment increased between pre- and post-test (five months after intervention), only the two intervention groups showed a sustained increase in enjoyment between post-test and follow up. Students' prior attainment in comprehension was consistently shown to be a strong predictor of comprehension performance at post-test. Other factors like sex, quantity of books in home, and first language were also strong predictors of word comprehension at post-test. Parental educational background and sex were strong predictors of sentence

comprehension in the post-test, but only sex remained an important predictor in the follow-up test. Although the authors reported that the programme had significant effects on students' enjoyment in reading and reading motivation, it did not have any effect on reading comprehension tests. All groups made significant progress between pre- and post-tests and between post-test and follow-up. Calculation of effect sizes for this new review showed that both interventions (school only and home/school) had small and negative effects on text comprehension compared to the control group. The differences in gain scores between control group and both intervention groups for sentence and word comprehension were small but suggest that students might have been better off without the intervention. The original authors suggested that although students enjoyed reading more, this did not translate to performance in reading comprehension perhaps because comprehension requires certain skills that needed to be taught. This means that students can be motivated to do well, but to actually do well they need the competence to do so. This study was rated near medium in quality because of its scale, and although there was no randomisation there was some attempt to control for prior and background differences.

4.3 Conclusion

This chapter presents summaries of the highest quality evaluations of parental involvement interventions found in the literature. What it shows is two things. A far higher quality evaluation of a simple of parental involvement intervention is desperately needed. And there is not yet enough evidence here that any intervention will work. The most promising elements of these seven interventions are summarised in Chapter Nine, but this is made difficult by the fact that six of them are very complex in structure (and three studies are by the same team of the same intervention). The studies presented in Chapters Five to Eight are of lower quality, and so are not generally described in as much detail. Their overall findings are just as ambiguous as those here.

Summary

- Applying our quality criteria, seven studies (seven instead of eight because two were the same study, with the second study analysing the data by gender) of medium and/or near medium quality were found. There were no studies judged to be of high quality.
- Four showed positive effects of parental involvement (PI) on academic outcomes, but these were multi-component interventions of which parental involvement was only one of them. So it is hard to say if PI was the active ingredient. It is possible that a combination of these (e.g. classroom and economic interventions) and PI work together feeding off each other and that is the magic potion. We do not know unless we conduct a series of trials that allows one to analyse the contribution of each component separately.
- Also, three of the four studies were conducted by the same team examining the same programme. These studies examined the effect of the Chicago Child–Parent Center Program, which uses a combination of classroom and parent activities to build a school-based learning environment which actively involves parents.
- Of the other three, one showed PI made no difference to academic outcomes and the other two showed that PI may actually have a negative impact, suggesting that children may actually be better off without the intervention.
- Although the intervention did improve reading motivation in the negative study, this was not translated to performance, indicating that motivation does not lead to performance unless accompanied by competence.

CHAPTER FIVE – PARENTAL INVOLVEMENT INTERVENTIONS FOR PRE-SCHOOL CHILDREN

There is a near consensus among policy-makers and practitioners, with support from some research commentators, that identifying children's problems early on in life and intervening when they are young is more effective and efficient in overcoming their relative disadvantage at school than doing so once they are in school. This is the long-standing rationale behind early intervention programmes such as the Head Start, Sure Start, HIPPPY, the Abecedarian and Carolina early intervention projects and other school readiness programmes. According to Heckman (2006), such pre-school interventions,

'promote schooling, raise the quality of the workforce, enhance the productivity of schools and reduce crime, teenage pregnancy and welfare dependency. They raise earnings and promote social attachment. Focusing solely on earnings gains, returns to dollars invested are as high as 15–17%... a rare public policy initiative that promotes fairness and social justice and at the same time promotes productivity in the economy and in society at large.'

Of all the early interventions, parental training programmes appear to be most prevalent, and their success widely accepted. In fact, C4EO was so confident in their own review analysis that they made engaging parents and parenting programme one of their priority areas (C4EO 2010). This may explain why the largest number of interventions uncovered in this new review relates to work with pre-school children. Many interventions for this age group involve parental training, and sometimes a combination of parental training and home support or home instruction. These include training mothers to interact with their children, providing instructional materials and guidance to support parents, and training parents to use school-related activities to support their children. Unfortunately, the majority of these studies are of low quality. They are grouped here into negative or unclear studies in which there is no clear indication that the parental involvement intervention works, and those that claim or report positive outcomes. In reality, because of the nature of the evidence all are somewhat 'unclear'.

5.1 Studies with positive outcomes

Boggess (2008) conducted a study of providing parents with educational materials to help them to practise essential skills at home with their children to prepare them for

kindergarten/1st grade. Support was given to parents and children to help them along. The intervention children whose parents were provided with extra support and resources performed better in terms of Georgia Kindergarten Assessment Program – Revised (GKAP-R) results compared to a group matched on standardised maths and reading scores. There were only 18 cases in each group and no randomisation. Participating parents were volunteers. It was not clear if implementation of intervention at home was monitored. The quality of the study is low.

In another study, positive effects were reported for training parents to use school activities at home for practising State Reading Tests (Calnon 2005). The reported effect size was medium. However, the 255 disadvantaged families were divided into a treatment group of 114 where the parents volunteered to take part and a 'comparison' group of 141 made up of those who refused to take part in the intervention. The researchers incorrectly used significance testing even though neither the sample nor the allocation to groups was random. A number of parent and student activity logs were missing. Fidelity of treatment is thus questioned, as it is not possible to verify the actual time spent on academic activity at home. Also, the parent surveys were completed by one group only, making comparisons between groups impossible. This study is of low quality and potentially very misleading because of the volunteer bias.

Fagan and Iglesias (1999) evaluated the Head Start programme, which involved a range of activities, but included the training of fathers about literacy and numeracy materials, trips and outdoor activities. The children had an average age of around four and a half. A total of 146 fathers were selected for the study but only 96 (66%) took part, with 55 in the intervention and 41 for comparison. The comparison group were not involved but taken from other geographical areas merely deemed to be equivalent to the sites of the intervention. The researcher reported that fathers on the programme showed an increased amount of time spent with their children compared to the other group. The children of intervention fathers scored higher on applied problems and letter-word identification. However, again, the study used multivariate analysis of variance (MANOVA) inappropriately with these non-random and non-randomised cases. There is no evidence that any subsequent difference was not already inherent in this volunteer group. The quality of the study is low.

A family literacy project known as Project EASE (Early Access to Success in Education) focused on training parents in supporting their children's language skills by providing scaffolded activities which were stage appropriate (Jordan *et al.* 2000). Parents of 177 kindergarten children in eight classes attended training sessions in school and were

provided with book-mediated activities for use at home to reinforce what was learnt in the parent sessions at school. All children improved on Peabody Picture Vocabulary Test-Revised (PPVT-R) and the Comprehensive Assessment Programme (CAP), but Project EASE participants made greater gains than a comparison group of 71 children in three other classes not receiving the intervention. This included vocabulary, story comprehension, sequence, sound awareness and concept of print. The size of the difference varied according to the amount of participation measured by completed book-related activities. The change was more impressive for children who scored lower in pre-tests than others. This, of course, could be the result of regression to the mean. Clarity of reporting was deficient for this study. For example, it was not clear how the allocation to groups was decided. It was also not clear whether interventions at home were monitored, so it is hard to say if the intervention was implemented as intended. The study was rated low.

Mullis *et al.* (2002–2004) reported a study that evaluated a parent support intervention to encourage parent–child interactions promoting dialogic reading, vocabulary development and print awareness among pre-school children. Parents were provided with information about early literacy. Parents also received activity worksheets to encourage them to work together with their children. A convenience sample of 41 children from three childcare centres were chosen to participate in the programme. These were compared with 26 children from two childcare centres not involved in the programme. However, only 35 parents in all took part ($n = 13$ for intervention; $n = 22$ for comparison group). Pre- and post-test comparisons reported that the experimental group improved more in print awareness and receptive vocabulary than the comparison group. No improvements were found in basic concepts and other measures of vocabulary. The researchers attributed this to the nature of the vocabulary tests. However, no baseline equivalence was established, so the groups could already have been different, and the researchers were wrong to conduct significance tests with these data. The results could be misleading, and the study quality is low.

Starkey and Klein (2000) described two experimental studies that evaluated the impact of training parents to support their children's development of maths and early reading skills. Thirty families with pre-school children in the Head Start programme were involved in the study. The families were African American and Latino, selected according to three criteria: a) child did not have special needs; b) at least one parent did not have mental health or substance abuse; c) family was low income according to US federal guidelines. A pre- and post-test comparison with a comparison group was carried out. The dependent variable was a maths test. As a different type of 'control' the study also tested the pupils in literacy. The hypothesis would be that the scores in math would increase but not in literacy. Positive gains

in mathematical knowledge were reported for the intervention group, but not for the comparison group. There was no difference in literacy. Despite this innovation, the weight of evidence for the study was still rated as low because of the very small sample size ($n = 30$), the lack of randomisation to treatment conditions and the lack of baseline equivalence between groups as evidenced in initial differences observed in the pre-test scores. This poses a threat to internal validity. Limiting the sample to only African American and Latinos also reduces the generalisability of the study.

Klein (1990) used a quasi-experimental design to re-evaluate a previous study that looked at a programme of parent education. Details of the original programme are not reported. The study used extant data from the previous study to compare 19 first-time parents involved in parent education with 22 other families. Results suggest that children of parents who participated in the parent education and support programme exhibited increased levels of cognitive competency, and treatment children scored higher on all measures of cognitive ability than comparison children. However, no difference was found for composite score and there was little or no observable difference in social competency. This study was rated low because of a combination of small sample size ($n = 41$), the lack of details about the original study design and the fact that the sample was unlikely to be representative of national population.

Dieterich *et al.* (2006) started from an assumption that training parents, using Play and Learning Strategies (PALS), does enhance their children's cognitive and social development (even though the previous section casts doubt on this). PALS is a home-based parenting support programme that helps parents to learn and practise a number of strategies to enhance their children's cognitive and social development. PALS facilitators were research assistants trained to work with families using PALS strategies. They made weekly visits to homes to coach and train mothers in using PALS parenting concepts. The study compared this approach with M-PALS which adds a mentor to the work of the facilitator. Mentors were recruited from the community and were trained in knowledge of social services and identifying mothers' personal and social needs. In addition they also provided support to mothers in implementing the PALS strategies. Dieterich *et al.* (2006) reported positive effects ($d = 0.62$) on children's cognitive skills measured using the Mental Scale from the Bayley Scales of Infant Development, and claimed that this difference was due to the use of mentors. The study initially involved 132 low socio-economic group families with young children aged 4 months to 4 years. Over 11% dropped out, almost entirely in the comparison group, leaving 46 in PALS and 71 in the M-PALS conditions. The two groups were matched on a number of items (not including older siblings), but were heavily unbalanced in terms of

ethnicity and marital status. The researchers attempted to 'correct' for non-randomisation and bias through the use of propensity scores, and then analysed the differences between groups using F-tests. Again, this use of probability calculations for non-probability samples and groups is a serious error. The study is rated as low quality, due to scale, dropout, inappropriate counterfactual and incorrect analysis.

Pungello *et al.* (2010) examined the effects of early educational intervention, namely the Abecedarian and Carolina projects, on academic outcomes of young adults. They used data from two longitudinal studies of cohorts to 'predict' the effects of early home environment and early educational intervention on the academic outcomes of young adults. The total sample was 137 (67 receiving early educational intervention and 72 controls). There were 104 cases in Abecedarian treatment and control groups combined, and 35 in the CARE groups. The smallest group was only 14 cases in the CARE treatment group. There is no description of response rates or dropout over time. The analysis presented suggests that early intervention was significantly associated with general educational attainment, post-compulsory participation gainful employment. *Post-hoc* tests of indirect effects suggest that home environment mediated the early risk factors for control group, but not for the treated group(s). The treatment took place in a university research centre and may not be representative of childcare experience for most children. The researchers were wrong to use significance tests with these non-random groups. Therefore, this study is rated low.

Garcia (2006) evaluated the well-known home-school collaboration project, HIPPY programme (Home Instruction for Parents of Pre-school Youngsters). HIPPY is a free, two-year home-based early intervention program for four- and five-year old children, designed to provide educational enrichment to at-risk children from poor and immigrant families. It involves a 30-week curriculum using an explicit, direct, instructional program. Lessons are designed to develop a child's skills in language development, problem solving, and sensory and perceptual discrimination. The programme is delivered by trained professionals living in the same, targeted high-need communities as the families they serve. It includes role-playing during biweekly home visits and monthly group meetings to engage parents in learning activities with their children, and help them to view themselves as active agents in their children's education. The intervention group ($n = 35$) included those who attended an early childhood school as a four year-old and participated in the HIPPY 4 and 5 programmes. The comparator group was made up of those who attended an early childhood school as four year-olds but did not participate in HIPPY ($n = 35$). Outcome measures were the TAKS (Texas-mandated criterion-referenced Texas Assessment Knowledge and Skills) and TerraNova and TerraNova SUPERA norm-referenced test scores. The researcher used

ANOVA and reported a significance difference between groups in five out of six test scores. Given that the groups were not randomly allocated, nor was the treatment group randomly selected, this use of significance testing is incorrect. Due to the lack of attempt to ensure balance between the initial groups and the small sample, this study is rated low.

5.2 Studies with negative/unclear outcomes

A quasi-experimental study with a pre- and post-test design looked at the effects of parent reading on the language development of Head Start children aged four in one school (Stevens 1996). The study involved 18 children whose parents responded to the letter of invitation (out of 84 letters sent out). Parents were given two training sessions. A total of 16 control children were randomly selected from a list of Head Start children who had taken the WPS Developmental Profile II test. There was no random selection of the treatment children, and no random allocation to groups. This means that the researchers were wrong to calculate and cite figures for statistical significance. The study found no differences between groups on the Academic and Communication post-test. Although the study reported an improvement for the experimental group between pre- and post-tests for three measures, no analysis was carried out involving the control group. This is probably a symptom of dredging. The study was given a low rating for weight of evidence.

Harvey (2011) examined the Family Development Credential (FDC) programme. The FDC programme uses trained service workers to help parents to be engaged with their children's learning, to enhance worker-parent partnerships, and to help families gain self-sufficiency and better skills. The intervention period ran from 1999 to 2004 for the first group (FDC1 before implementation) and 2005 to 2010 for the other two groups (FDC2 and FDC3 after implementation with and without trained workers respectively). Participants were those who were assigned to family service workers in the Family Support Programme, and who agreed to receive intensive services (i.e. home visitations, child development, self-sufficiency, parent involvement, and health and nutrition for parents and pre-school children). The total sample was 2,365 children aged nought to five, and 2,224 parents, the majority were Black (59%), a third White (29%). This is a large sample. However, data were not available for everyone for all the variables. Total Involvement (TI) scores were calculated for 2,366 children, but regression analysis for TI scores was conducted for only 1,025 children (Table 10 p. 77), and regression analysis for Child Delay was conducted with only 695 children (Table 21, p. 95). The outcome measure was school readiness indicated by the level of parental involvement and child developmental appropriateness (delay/no delay). The study found no overall impact of FDC on delays. Since there were three groups and comparisons are also drawn

within groups by ethnicity the smallest arm was only around 67 cases (29% of 695/3). The groups were not randomly selected or allocated and so the researcher's use of significance tests is a clear error. It is hard to interpret the results of this study as the measurement of school readiness was based on evidence of delays or no delays as indicated by the Child Development Assessment questionnaire. Participants were self-selected and some family workers were also trained in an alternative parenting-programme known as Parents as Teachers (PAT). For these reasons the weight of evidence for this study was rated as low.

Necoechea (2007) evaluated the HIPPY programme. HIPPY is an early intervention home visiting program aimed at providing support services and training for parents from disadvantaged background to enable them to help their children to be ready for school. The HIPPY programme in the study offers multi-component services including home support, community-based parenting classes and adult education classes for immigrant families. The intervention involved families receiving a 15-week curriculum of seven 30–60 minutes of home visits and eight group meetings of two to three hours. Participants were aged three to five from disadvantaged backgrounds and considered as being at risk of school failure. Families were recruited by invitation and 52 parents volunteered to be on the programme. Data on the level of parental involvement at home and children's literacy and language skills were collected during a 30-minute interview before the intervention. Families were then randomly assigned to treatment or control groups (26 in each condition). To control for differences between children in the two conditions, random assignment was stratified by age and early childhood education enrolment. Outcome measures were children's oral language skills using pre- and post-test scores on two standardised, norm-referenced measures, and children's emergent literacy skills measured using the Developing Skills Checklist. There was no difference between the groups in terms of children's receptive language or emergent literacy performance and parental involvement at home. However, the tests (e.g. test of receptive ability) may not be valid as children and parents were trained in Spanish (story books, curricula packets and parent-led lessons were all in Spanish), but tested in English. Test for emergent literacy (Developing Skills Checklist) was generally used for older children (aged four years and older), while study children were all under four and from low-income families whose first language was not English. The study was rated low for weight of evidence, largely because of scale.

Bekman (2004) conducted a matched comparison study of the Mother–Child Education programme for children aged five to six years old in Turkey, which looked at how training mothers in interacting with their children can foster the cognitive and psychological development of children. Mothers were provided with worksheets every week, with

instructions on daily exercises to be used with their children, in sessions lasting 15 to 20 minutes. In addition, there was an enrichment programme for mothers to show them how to provide a home environment conducive to development. Originally, 217 mothers with young children were selected but over 18% dropped out or were missing from the analysis. The eventual treatment group of 92 were merely matched on a range of social, economic and educational factors with a comparator group of 85. The researcher claimed success for the intervention after it had run for eight months, and again after a further year had elapsed. However, the outcome measures were developed by the researcher, and different tests were used for the pre- and post- measures. No intention to treat analysis was reported. Bekman (2004) used and reported significance test results based on analysis of covariance (ANCOVA), but this is completely inappropriate and potentially very misleading because the sample was neither selected at random nor allocated randomly to the treatment group. No mean scores or standard deviations are reported, which makes calculation of 'effect' sizes problematic. Without these details it is not possible to describe the results of the study accurately. The treatment group did no better than the comparator in terms of numeracy and pre-numeracy. The treatment group did (an unspecified amount) better in literacy and onset of reading than the comparator. But this change cannot be easily attributed to the intervention itself due to the problems of this study in design, implementation and reporting. For these reasons the study is rated low in quality.

Landry *et al.* (2011) evaluated the Play and Learning Strategies (PALS) programme involving only facilitators (see below). In this study 166 children were randomised to one of four groups representing a combination of PALS (I and II) or DAS (Development Assessment Session, I and II). Facilitators visited homes and offered a 'detailed curriculum' to parents, videotaped their interaction with their children and gave them feedback on how they were doing. The results showed that mothers of toddlers/pre-school children on the programme made the biggest gains in terms of responsiveness. Children also showed gains in verbal responses and initiative. However, there was no actual analysis of reading ability and impact on later reading ability/behaviour. The emphasis of the study was on mother-child reading behaviours. For the purposes of this review, the study was rated low in quality.

Rhimes (1991) evaluated the effect of a parent training-programme on children's academic outcomes. The intervention involved training parents to work with their children both at home and in the school. Parents were shown how to use classroom-related activities to help with their children's learning. Participants were children aged five, all from one school, who were identified as performing one to two years below their chronological age in the Peabody Picture

Vocabulary Test (PPVT-T). Of the 91 children identified, only 40 were involved in the study. Intervention children ($n = 20$) were randomly selected from those whose parents volunteered to take part in the training. Pre- and post-test comparisons of performance of these children were then compared with those whose parents did not volunteer. T-tests showed no significant differences between groups in reading and student attitude. Calculation of effect sizes, however, showed that the two groups were different in academic achievement as measured by the Metropolitan Achievement Test-6 Form L (MAT6) test. The study was given a quality rating of low largely because of the very small sample size.

Chang *et al.* (2009) evaluated the longitudinal impact of three parental involvement programmes involving parental training and parental support (parenting classes, group socialization and support groups). The study used data from three waves of Early Head Start Research and Evaluation (EHSRE) across 17 sites in the US (1996–2001). A total of 2,977 families with 3-year-old children were randomly allocated to treatment ($n = 1,513$) and control ($n = 1,474$) conditions, although data are only available for 1,503 treatment cases. Children's cognitive development was measured using the Bayley MDI scores (index of children's mental development). Using hierarchical linear modelling, the authors proposed that parenting classes increased parents' linguistic and cognitive stimulation for English-speaking parents, but not for other language groups. Cognitive stimulation was, in turn, shown to be the most important parenting behaviour that was significantly associated with increases in Bayley MDI scores. This study has a number of weaknesses. First it did not compare the results of the intervention and control group. Instead comparisons were made with a reference group (English-speaking families) even though there was a control group. There was also no pre- and post-intervention comparison, so it is not clear if the results would have been the same with the control group. Without a clear counterfactual for attainment, for the purposes of this review, the study was rated low in quality. A recent longitudinal study using the Millennium Cohort Study suggests that social class remains an important predictor of children's early cognitive scores and individual parenting behaviours alone cannot account for differences in children's early school performance (Sullivan *et al.* 2013).

One study looked at the long-term effects of the Turkish Early Enrichment Project, which combines parental training and home instruction (an adaptation of HIPPEY or Home Instruction Programme for Preschool Youngsters), on cognitive development of children aged three to five (Kagitcibasi *et al.* 2001). In this study all mothers in the three groups (home/custodial/educational centres) selected for the project were involved in the Cognitive Programme. They received worksheets plus storybooks with accompanying instructions over

two years. Within the home group children were randomly selected to be in the Mother Programme or not. Mothers of children selected for the Mother Programme also attended biweekly group discussions on child health, communication and discipline. These were run by trained local participants who had higher levels of education themselves and by mothers' aides who were recruited from within the communities. Reporting of this study was not always clear, but it seems that 280 children were originally selected, 255 actually participated (of which 90 were in the Mother Programme), and 217 (78%) provided data for the follow-up six years later. The results are unclear. The study reported positive gains on the programme for 23 of the cognitive measures for children in educational settings, but not for those in custodial and home settings. Therefore, the Mother Programme could be deemed ineffective (and this is the element of interest to this review). However, analysis of the longer-term results showed a reversal of the effects with Mother Enrichment Programme being the significant factor. The study is rated low, largely because of the small cell size (average of 30 for the intervention arm). A lot of early data was lost because of computer failure, and in almost one-third of homes where parent training did not occur, report cards were lost, so data were incomplete. Kagitcibasi *et al.* (2009) revisited the sample 19 years later tracking the children to adulthood. They reported that those receiving either the Mother Enrichment Programme or Educational Preschool Education had positive effects in development which could be detected in early adulthood. Fewer than 47% of the original participants were included in the analysis, so this study is rated low in quality.

Sheridan *et al.* (2011) conducted a randomised controlled trial to examine the effects on early language and literacy skills of getting parents involved in young children's education. The intervention involved structured activities to train parents to support their children's learning over two years, including around eight 60-minute home visits and activities to encourage parental warmth and sensitivity, support of child's autonomy and participation in child's learning. Participants were children enrolled in 21 Head Start schools ($n = 217$), their parents ($n = 211$) and their teachers ($n = 29$). However, attrition for both groups was high (46% overall), meaning that results are only available for just over half of the original children randomly assigned to experimental ($n = 116$) or control ($n = 101$) conditions. The outcomes of interest were language and literacy skills measured using the Teacher Rating of Oral Language and Literacy (TROLL) and the standardised Preschool Language Scale (PLS-4). Hierarchical linear modelling analysis suggested that the groups were significantly different on teacher reports on reading, writing and language use. The treatment group made greater gains than the control group with large effect sizes on three measures ($d = 1.11$ for language use; $d = 1.25$ for reading and $d = 0.93$ for writing skills). However, no differences were found in Expressive Communication scores using the standardised norm-referenced tests. The

teacher assessed results could be partly the result of altered parental and teacher behaviour as a result of participation in the intervention, other than the intervention itself. There was no measure of children's school readiness as no follow-up data were collected as children moved from kindergarten to early grades. The study is rated low because of the attrition.

Lonigan and Whitehurst (1996) conducted a randomised controlled trial (a six-week-intervention programme) of a dialogic reading intervention for pre-school children, less than five years old, from disadvantaged backgrounds. There were three levels of intervention: teacher only reading, parent only reading and a combination of parent and teacher reading. The relative effectiveness of the three levels of intervention was compared with a control group that received no treatment. The children were from four childcare centres where most of the families were in receipt of public subsidy. Of the 113 children recruited, 91 completed most post-tests. These children had been randomly assigned within the classroom to one of the four conditions: school reading ($n = 31$); home reading ($n = 16$); school plus home reading ($n = 17$) and control ($n = 27$). Dialogic reading involved parents reading to children (on a one-to-one basis), teacher reading (to groups of less than five children), and a combination of parent and school reading. Oral language was measured using three standardised tests – the Peabody Picture Vocabulary Tests (PPVT-R), the Expressive One-Word Picture Vocabulary Test (EOWPVT-R) and the Illinois Test of Psycholinguistic Abilities (ITPA). Children exposed to both parent reading and home plus school showed the biggest gains between pre- and post-tests. The results also vary with dosage in that children in schools which employed the strategy on a more frequent basis made greater gains in reading compared to those in control schools. In low compliance schools, parent reading and teacher reading had little or no effects. In fact, on some measures there are negative effects. In presenting the results for low and high compliance centres separately, and not overall the researchers have divided their 91 cases into eight groups of which the smallest contained only eight children. Variation in fidelity to treatment is normal for any real-life intervention. This study is judged to be of low quality.

St Pierre *et al.* (2005) evaluated the Even Start Literacy Programme. This is partly a home-support and parental training programme which tracked 462 families over two years. The study compares the outcomes of children on Even Start with a comparison group. The findings suggest that Even Start programmes do not have any impact on child literacy, parent literacy or parent-child interactions, when compared with control families. The researchers speculated that the lack of impact could be due to low level participation of families and ineffective instructional services because of the curriculum content and instructional approach. However, no pre- and post-test comparisons were made so it was

difficult to see if the gains in academic outcomes for the treatment and control groups were different or not. There was also no proper implementation of the programme and no consideration taken of other possible confounding variables. For these reasons, the study was rated low on the weight of evidence.

5.3 Conclusions

There were ten studies relevant to pre-school age that claimed or reported unclear/negative impact from increased parental interventions, and all were deemed of low quality. Many of these are tiny, with group sizes for analysis of 26, 20, 16, and 8. One other had 30 cases per arm but had lost so much data that a comparison was not valid. One had a control group but ignored it. The largest study also had high dropout. One used their own test without calibration, one used changes in behaviour rather than tests to make claims about attainment, and one claimed positive results for teacher-reported outcomes but found no gains using a standardised test. This is instructive because it suggests we should not rely on bespoke tests, indirect indications or simple self- or teacher-reports.

There were thirteen studies relevant to pre-school age reporting largely positive results, and ten of these were deemed low quality. Again many were small, with treatment groups of 19, 18 and 14, without randomisation or clear prior matching. One study involved a total of 30 cases, another was slightly larger but had 45% dropout, and another had clearly unbalanced comparator groups from the outset. One even quoted effect sizes for gains in a parental volunteer group compared to those parents who refused to participate, and claimed that these were the effects of the programme. This is not social science, but it is not that unusual in this review (and it is important to keep recalling that the studies cited here are among the best). One study had an unmatched *ad hoc* comparison of one school; another like many others misused significance testing with non-random cases and presented the results as 'effects'. One was just unclear about the group sizes and how cases were allocated to groups. Overall, it is difficult to conclude that there is any solid evidence of effective parental interventions for pre-school children in this chapter, despite the widely held belief that early interventions will be the most effective.

Summary

- There were 23 studies that evaluated PI interventions for pre-school children.
- Three of these were rated medium or better. These were described in Chapter Four.
- The rest in this chapter have been rated low in quality of evidence.
- Thirteen of these studies reported positive effects, but 10 of these were so seriously flawed that their findings cannot be trusted.
- In 10 other studies negative outcomes were reported or were unclear. These were also of poor quality.
- All these studies had similar problems, e.g. they were either small (fewer than 30 pupils per arm), had high drop outs after randomisation, did not include control group in their analysis, or only show positive impact using teacher reported outcomes but no effect using standardised test, or used significance tests inappropriately.

CHAPTER SIX – PARENTAL INVOLVEMENT INTERVENTIONS FOR PRIMARY-SCHOOL-AGE CHILDREN

As with pre-school children, it is assumed that primary-school-aged children also benefit from parental training, as well as home–school collaboration programmes. Interventions to improve primary school children’s outcomes largely concerned parental training, home–school collaboration, and parents working with children at home.

6.1 Studies with positive outcomes

Goudey (2009) evaluated a 16-week parent–child paired reading programme using a randomised controlled trial (with a waiting-list control group). An added feature of this programme was the use of word recognition strategies. The study, conducted in Canada, compared the effects of training parents to read to their children with and without such strategies. A group of 58 children from grades 2 to 4 participated in the study. These were children whose parents had responded to letters of invitation (a total of 335 letters from first year and 278 from second year were sent out). Less than 10% of parents responded. Participants were randomly assigned to three groups (PR; PR–PHAST; Control). Both intervention group parents were trained in paired reading using videotapes. PR–PHAST parents received additional training on word recognition or Phonological and Strategy Training. Children were then tested on a range of reading skills, using standardised reading tests, Woodcock Reading Mastery Tests, Test of Word Reading Efficiency and the Standardised Reading Inventory, Vocabulary measure using the Peabody Picture Vocabulary Test (3rd edition), naming speed using Rapid Automated Naming Task test, and Knowledge of sounds of letters and letter combinations and ability to say them aloud. This skill was measured using the Sound Symbol Identification Task test. Pre- and post-test comparisons suggest that children whose parents were trained to use paired reading together with word recognition strategies performed better than those whose parents used only paired reading and control children on all eight measures of reading. However, there were no, or small differences, between PR only children and control children. The suggestion is that it is not the paired reading but the use of the word recognition strategy that is effective in improving children’s reading. However, the study is of low quality due to the small sample, with fewer than 20 cases per group.

In an older study, Wehrell-Chester (1994) evaluated the effects of training parents to work with their children on physical science achievement, attitudes towards science and involvement in science-related activities. This is the only parental training intervention in this

review that looks at science achievement. The aim of the study was to compare the effects of training parents only and training parents and their children together. The intervention was for older primary children (aged nine and ten). A total of 14 teachers, 79 parents/families and 243 grade 4 and 5 children participated (treatment $n = 84$; control $n = 159$). It was a four-week programme where teachers ($n = 14$) on the programme were trained over a two-day workshop on family science curriculum. Parents and children attended six weeks of training on Family Science for two to three hours per week. Parents in treatment groups were given the Families Investigating Physical Science Together manual with detailed instructions on how they can work with their children together at home. In the class, the teacher demonstrated the experiment and students then worked on the experiments either with their parents (in the case of parent-child group), or parents working in pairs or threes (in the case of parent-only group). At the end of each session, homework activities were assigned and parents in both treatment groups were encouraged to work with their child/children at home. Control students did not receive the homework activities. Although the study reported that the intervention was not particularly effective in improving parental involvement, it did improve science achievement for both treatments. Pre- and post-test comparisons showed that both treatment groups made greater improvements in science compared to the control group ($ES = 1.46$, calculated by the reviewer). There were no significant differences between the two treatment groups in science achievement ($ES = 0.06$) and attitude towards science. This study was rated low for a number of reasons. First, the small treatment group of 84, which was divided into two subgroups, meant that the treatment sample was even smaller than the control (parents only group = 38; parent-child group = 46). Second, the science achievement tests used were not standardised tests. They were researcher-developed instruments.

In a quasi-experimental study, Reutzler *et al.* (2006) examined the impact of a home reading programme (Words-to-Go) where schools worked with parents in providing them with training throughout the school year on how to read aloud with their children. In addition to reading to their children, parents were trained in decoding instruction and practice. 144 children from eight 1st grade classes (67 treatment and 77 control students from a matched school) participated in the programme. Both parents and children received books to bring home. Children brought a book of an appropriate reading level home every day to read to their parents. Intervention parents and their children were given a new Words-to-Go lesson to bring home every week (script and materials). Control parents, on the other hand, only received a letter explaining how they could help their child with homework. Both experimental and control students were also involved in in-school phonics instructional programme as well as a family literacy programme. Outcome measures included the

Systematic Sequential Phonics They Use assessment and the State Core Assessment End-of-Level Test in Language Arts. Pre- and post-test comparison showed a positive effect size for the WTG programme for both reading and writing. The author concluded that being able to decode words accurately is important in enhancing reading. However, the researchers presented individual child-level significance calculations that are not appropriate to this two school comparison. There was a low level of attendance by parents in the training sessions (65%). Thus the study is rated low in quality.

The Migrant Education Even Start Family Literacy Programme (MEES), also a familyinvolvement-training programme for migrant families, reported positive effects on all measures of children's literacy (St Clair and Jackson 2006). Participants were taken from two elementary schools, one a public school and the other a parochial one. Fourteen families and their 14 kindergarten children, mainly Hispanics, formed the intervention group. The comparator included 16 children and their families merely matched on ELL and who were not on the MEES programme. Intervention parents attended 25 1-hour training sessions over the year where they were trained to support their children in the school curriculum. Comparisons of gain scores at the end of the first grade showed that intervention children outperformed comparison children on all measures (except picture vocabulary). The difference was reported as significant but the groups were not randomised and so the use of significance testing is an error. This study was given a low rating, because of the small sample size, no randomisation and the fact that the two schools were quite different.

In a study on paired reading, Fiala and Sheridan (2003) examined the effects of training parents in reading to their child. The aim of the study was to see if parent tutoring via parent reading using controlled reading materials can increase the accuracy and fluency of reading which is measured using curriculum-based measurement (CBM) probes. Fiala and Sheridan (2003) were also interested in finding out whether such paired reading could be implemented by parents with minimal training. The sample included children in grades 3 and 4 who displayed reading difficulties measured by CBM probes. Only three students participated in the study. There was no control group, so the effects of the intervention were observed by comparing pre-and post-tests achievements for the different measures. All three children showed wide variation in baseline data. The study reported large pre- to post-test positive effects for all participants ranging from 0.65 to 2.04. This study was given a very low rating due to sample size, lack of comparator, and contamination with another reading intervention.

A Canadian study, which looked at the impact of training parents to read to their children, reported positive effects on children's reading abilities (Sparkes 1995). The intervention

included training parents in parent–child interactive reading as well as providing resources for parents to use. This was a 14-week intervention where parents read to their child for at least 15 minutes for five nights per week. Children read five books per week and parents read three books to their children. Parents were also required to keep a reading log. To ensure the intervention was carried out as intended parents tape-recorded one paired reading session per week, and based on this the researcher provided feedback and made suggestions for improvement. The sample of 14 children was selected from 80 grade 1 pupils within one primary school. All the children were from working class, low-income families and were selected by teachers based on reading ability (assessed by teacher’s observations of students’ overall performance throughout grade one), SES, gender and age. The children were matched in pairs, and each pair was randomly placed in one of the two intervention conditions (experimental or control). Pre-, mid- and post-tests were carried out to compare performance on a number of reading measures: Reading ability (Gates-MacGinitie Reading Test (GM)); vocabulary (Peabody Picture Vocabulary Test); sight vocabulary (Slosson Oral Reading Test) and reading attitude (Inventory of Reading Attitude). The results show improvements in tests of reading ability, vocabulary and sight vocabulary, with the experimental groups making bigger gains than control groups. There is little difference in reading attitude between the two groups. The small sample size means that the study is rated as low in quality.

In a UK pilot study, Topping *et al.* (2004) evaluated the Duolog method of maths tutoring using parents as tutors. Thirty children from a large primary school in Scotland, identified by their teachers as those working below the average range in the 5–14 national curriculum, were randomly allocated to experimental ($n = 17$) or control group ($n = 13$). The study was initiated at the request of the school. Duolog Maths is a peer tutoring method similar in concept to Paired Reading. It is based on a set of generalised tutoring behaviours. The authors claimed that this method has the advantage of generic application, as well as being related to the individual child’s needs according to the school curriculum. It can be implemented by anyone without necessarily having an expert knowledge in maths. It is thus suitable for parents to use at home with their children. Parents were trained in one-to-one tutoring behaviour in a one-hour training session where they were introduced to the method, and given demonstrations on how the method works. In addition they received printed literature explaining the method plus commercially produced booklets with sample maths problems. They had three practice sessions of 20 minutes each per week using the sample maths problems in the booklet. Control students were ‘business as usual’ with homework completed individually at home. The authors reported that the experimental group made significant gains in pre-post tests using a curriculum based assessment, but control students

did not, and boys made greater gains than girls. There were no significant differences on pupils' pre-post tests on affective reactions to maths and working with their parents on maths homework. Comparisons of gain scores between groups showed only a small effect ($ES = 0.1$). This study was given an overall rating of low due to sample size. Homework was not independently monitored, so it was not clear if control students had help at home, and whether experimental parents adhered to the suggested strategies. There were also issues with confounding variables such as additional time spent on homework by experimental students, and extra attention given to intervention children. It is possible that the better child-parent relationship and the students' perception of increased parental interest in school work was a result of the intervention that motivated children to do well by putting in more effort in their work.

Rasinski and Stevenson (2005) conducted a randomised controlled trial with 30 1st grade students (15 control and 15 experimental) to test the effects of the Fast Start programme, a home reading programme. The intervention involved parents reading to their children for 10–15 minutes a day. Parents were first trained to use the Fast Start parent-tutoring programme and reading materials for use at home. Weekly phone calls were made to obtain feedback and information from parents. Control parents followed the usual school reading programme and received no additional instructional materials, although their home reading activities were collected. Both experimental and control students made progress between pre- and post-tests for both Word Identification (LW) and Reading Fluency tests (CW), with small effect sizes for LW (0.19) and CW (0.2). The sample is very small and study is rated low.

Another home-school collaboration intervention involves parents in learning activities in school to strengthen parent-school partnership (Kyriakides 2005). For example, when teachers planned activities they included activities for parents as well. Parents were invited to give feedback to encourage communication. The study involved year 5 students in two village schools in Cyprus (92 in intervention school and 95 in control school). The researchers reported that MANOVA showed the intervention had a positive impact on children's language, maths and social science performance with medium to large effect sizes (calculated for this review) using both external and teacher assessed tests. The impact also appears to be maintained six months after the intervention. The findings suggest that schools working in cooperation with parents can have beneficial and sustained effects on young children's academic achievement. However, the researchers are wrong to use significance tests with no random selection or allocation, the number of schools is small and the groups may not be equivalent. The study is low quality.

Van Voorhis (2011a) examined the effects of a weekly interactive maths programme on family involvement, emotions, attitudes and student achievement. The intervention involved training teachers to use TIPS (Teachers Involve Parents in Schoolwork) and teacher-developed materials which required students to work with an adult member of the family (parents) at home. Parents were encouraged to maintain communication with the school with an invitation to give feedback about their homework experiences and to comment or question some of the activities received by their children. This is a longitudinal, quasi-experimental study of maths achievement which included 135 grade 3 pupils in the first year, and 169 grade 4 pupils in the second year, and eight teachers from four primary schools (two teachers from each school). Students were not randomly selected. It is not clear where the additional pupils in the second year came from. One teacher from each school was randomly assigned to treatment or control condition in a matched control classroom. TIPS teachers implemented the interactive math homework as well as other homework, while ATIPS teachers used the usual math homework. Results of multiple regression analysis showed that students exposed to TIPS for one year did slightly better than control students even after accounting for prior attainment (grade 2 standardised maths score). Prior attainment explained 55% of the variance (an increase of 32 percentage points) after background variables were considered, and adding TIPS homework increased this to 57% (an increase of only 2 percentage points). The researcher also concluded that the 2-year TIPS programme had positive effects on increasing the level of family involvement in math homework (although not for science or reading), compared to control and one-year TIPS students. It has to be noted that although there were 169 students in the second year, data was available for only 153 students. Of these only 26 had TIPS for two years. Given the very small number of TIPS two students, the result has to be interpreted with caution. Also it was reported that TIPS 2 students were different to TIPS 1 students, being more likely to be White, had better grade 2 maths scores and less likely to be eligible for free/reduced lunch. Since TIPS 2 students started on a higher level a comparison of gain scores between groups would probably give a more accurate picture of the efficacy of the treatment. The researchers were wrong to use significance tests with non-random data and non-randomised individuals. For these reasons, the study was given a low rating.

Adadevoh (2011) is a small-scale experimental study of 28 grade 4 African American children most of whom were in receipt of free/reduced lunch. The study reported big positive effects of using computers at home with parental monitoring for reading (ES = 1.15) and maths (ES = 0.736) and language arts (ES = 1.08) compared to children not using computers at all. Compared to students using computers without monitoring, those with parental monitoring also did considerably better (ES = 1.17 for language; ES = 0.85 for

reading), except for maths where those using computers without monitoring appear to perform better than those with monitoring (ES = -0.3). It appears that computer usage with parental monitoring is more effective in improving performance in literacy (language arts and reading) than for maths. This study is given a low weight of evidence because of the very small sample, which was further reduced when it was divided into three groups (computer use without monitoring, computer use with monitoring and no computer use at all). It is also not clear if computer usage was monitored at home. There is no report of how it is ensured that parents in group 1 (without monitoring) did not manage or control the use of computers by their children at home. The use of teacher-developed tests could also affect the reliability and validity of the results.

Another intervention that encourages parents to work with their children at home is the Family Math parental involvement programme (Luce 1993). The intervention is a series of workshops conducted once a week for six weeks. Parents and their children attended these workshops together where they were encouraged to work together at home on maths-related activities. Participants were 4th and 5th grade students from two schools with at least 50% of children on free or reduced lunches. Only 50% of students (with their parents) agreed to take part in the programme. These children were randomly assigned to experimental ($n = 66$) and control condition ($n = 44$). Seventeen in the experimental group were dropped (representing an attrition rate of 26%) because they did not attend the minimum of four out of six workshop sessions. Control students and parents did not attend these workshops and did not receive additional instructional materials about working together at home. The study reported that 5th grade students in both experimental and control groups did better than 4th grade students in the maths test. They also had higher self-esteem and better attitudes towards maths. Comparing 5th grade children with 4th grade children cannot in any way show the effects of the intervention. Multivariate analysis shows that the differences between groups were mostly attributed to differences in attitude towards maths. There is no reason why pre- and post-test comparisons of gain scores between groups were not carried out. This would have been a better way of assessing the impact of the intervention. This study was rated low because of the small sample, who were largely volunteers, high attrition from experimental group (after randomisation) and inappropriate analysis to assess impact of intervention.

The Home-Education Literacy Programme (HELP) is also a home learning programme that encourages parents to do homework activities with their children (Morrison 2009). Unlike Luce (1993), this study focused on reading comprehension. The intervention involves giving parents weekly packets of storybooks with detailed activities in vocabulary and comprehension, for example, during orientation week. It is a 12-week intervention in one

district in the US. A convenience sample of 146 1st grade children of mixed ethnicity from eight existing classes participated. Four classes were assigned to treatment conditions ($n = 74$) and four to control ($n = 72$). Assignment to conditions was not randomised. 85% of students completed at least ten of the 12 packets of reading comprehension activities. The family backgrounds of the two groups were not very different. Independent sample t-test and the Wilcoxon rank sum test indicated that experimental parents improved significantly between pre- and post-test in parental efficacy and parental involvement compared to control parents. Measurements, however, are based on parental self-reports rather than any test or observations. Results also suggest that experimental students made bigger gains between pre- and post-test on reading comprehension with a medium effect size of 0.67 (calculation by reviewer). This study was given a low rating because of the small sample based in one district (limits generalisability) and attrition after intervention has started. The use of significance testing given that the sample was not random is also inappropriate. Parents' self-efficacy and involvement were based on self-report. This may affect the validity and reliability of results.

McDonald *et al.* (2006) evaluated the effects of a family support programme (FAST or Family and Schools Together) comparing it with a parenting skills training programme (FAME or Family Education). The FAST programme involves working closely with schools to get families together to form a support group, and empower parents to protect their child from risks while they are young. The programme works with the school in first identifying children with behavioural problems and inviting the family to participate in the programme. FAME is a behavioural parenting skills programme which simply offers information in the form of pamphlets and lectures to parents. McDonald *et al.* (2006) used a quasi-experimental design to compare the effects of the two programmes. A total of 130 Latino families (80 FAST and 50 FAME) from ten urban elementary schools in Milwaukee, US took part in the project. Children were from 1st to 4th grade. Classes rather than children were randomly assigned to either FAME or FAST. Teachers were blind to allocation. Participation rates for FAST varied, but overall completion rate was 69%. All the families in the comparison group were sent the eight pamphlets, but only 4% ($n = 20$) of the parents attended the parent sessions. Teachers collected data on child behaviour and social skills using the Child Behaviour Checklist and the Social Skills Rating System. Academic performance was based on teacher report. The study was rated low quality. Using an intention-to-treat analysis and hierarchical linear modelling, the authors reported that FAST children showed significant improvements in academic performance compared to children on the FAME programme. They also scored higher on social skills and displayed less aggressive behaviour (according to teacher reports). This study was given a low rating largely because of the small scale, and the

assessments were based on teacher reports and child behaviour checklist. The reliance on teacher assessment and teacher evaluations of children's family background puts into question the reliability and validity of the results. The low participation rate is another issue.

6.2 Studies with negative/unclear outcomes

A small scale quasi-experimental study involving only ten parents in three schools in the US considered the effects of training parents in phonemic awareness skills (treatment group) and read-aloud techniques (comparison group) on the literacy skills of children aged five to six (Warren 2009). The children were from low-income families and identified as low achieving (i.e. attaining lower than 20% on DIBELS test). The intervention was a ten-week nightly training session to train parents in phonemic awareness using materials developed by the researcher. The parents then used the skills learnt to teach their children every day for 30 minutes on phonemes. Comparison parents, on the other hand, were trained to use the read-aloud strategy. Only ten of the initial 30 parents who were identified agreed to take part. 20 dropped out due to inability to commit. This was despite efforts to ensure that parents could attend training sessions, such as arranging transportation, babysitting and even providing refreshments. Parents were also given incentives like coupons for food, petrol and school supply. The ten children were randomly assigned to treatment ($n = 5$) and comparison groups ($n = 5$). The study only reported results for pre-post-test comparisons for two measures of the standardised DIBELS test, but not the criterion-referenced tests. No explanation was given for why pre- and post-test comparisons were not made for the other two tests. The results showed no significant differences between groups on pre-post-test comparisons for Phoneme Segmentation Fluency and Nonsense Word Fluency. This study was rated low for weight of evidence because of the small sample size, and low parent participation rate.

Albright (2002) evaluated the impact of parent-teacher communication on children's spelling and homework achievement. To do this, 83 2nd grade African American children in five classes were randomly assigned with their teachers to control or intervention conditions. The intervention involves providing parents with information about how to help their children with their spelling and homework. Control classes received no such information or guidance. The results of the two groups' weekly spelling tests and the cumulative test post-intervention were then compared. Results showed that although intervention students did better than control students on the weekly test (small effect size, $ES = 0.2$), control students actually performed better than intervention students on the post-intervention cumulative spelling test ($ES = -0.44$). There were no differences in terms of homework completion, but control

students were more likely to complete homework correctly. The intervention also did not show an effect on improving communication between teachers and parents. There were a number of weaknesses with this study. Classes/teachers rather than children were randomised (three intervention classes and two control classes) and so the researchers are wrong to cite significance tests based on individual randomisation. Five classes is a small sample and the study is rated low.

A study looking at Home-School link (HSL) found no difference on a criterion-referenced reading test between those involved in HSL and those who were not, in terms of gain scores between pre- and post-tests (Davis 2004). The intervention was a 12-week activity guide homework to be completed every week by the students. Parents were also given activities to complete with their children. In some cases teachers also gave additional homework on maths, science, reading and social studies. Allocation to conditions was by teacher volunteers. Fourteen teachers from three schools were selected to be in the experimental group and 20 from four schools in the control group. ANOVA indicated that there were no significant differences between intervention and control groups in gain scores between pre- and post-tests (but no effect size calculation was reported). The study also reported no significant difference between those in HSL plus district intervention and those who had only district intervention, and those in HSL only and control (district intervention only). This study was rated low because of the small sample size ($n = 311$ representing half of those targeted for the programme) which was further divided between those who were involved and those not involved in district programme as well). Results were reported only for those whose parents consented to data being used. This can pose a threat to internal and external validity as parents who consented and those who did not could be inherently different. The use of significance testing was not appropriate as the sample was not a random one, and the groups were not randomly allocated. The study was deemed not quite close enough to medium quality to appear in Chapter Four.

Another parental training intervention where parents were trained in reading strategies to use at home involved first grade students from two schools in the US (Roberts 2008). Treatment parents attended three training sessions, were given home packs with instructional materials and resources to help set up a home library, with training provided on how to use these books and resources. Treatment students were 48 students from School A whose parents attended parental training, and the comparators were other students in School A, and all students in School B. On p. 14 it was reported that there were 139 1st graders (unclear whether it was from one school or both schools). On p. 56, the table shows that there were 101 control students in control school B, 48 treatment students and 47

control students in treatment school A. Then on p. 64, it was reported there were 96 first grade students in the treatment school, and 100 first grade students in the control school. Students' reading gains were measured using the DIBELS tests, the Scott Foresman COP, running record assessments and sight word-knowledge tests. The researcher reported no significant differences between treatment group and control group in the same school, and significant differences in reading gains between the treatment school and control school. But the treatment school had other parallel interventions like the implementation of the Reading First Grant. The tests used were inconsistent between schools (no DIBELS data for School B), no gain scores were reported, the groups were not randomised yet the researchers used ANOVA and reported significance levels. This study is of very low quality, and quite poorly reported.

Smith (2000) evaluated a home literacy programme where children were given Family Literacy Bags containing storybooks and literacy materials to be taken home and returned every two days. This is a randomised study with a pre- and post-test design to evaluate the nine-week intervention. Participants were 60 2nd grade children from five classes (unclear if it was one school or not). Classes rather than pupils were randomised (two control and three intervention classes). Eighty-eight parents consented to participation, but only 82 children sat for the pre-test (no explanation was given for the missing children), and only 60 students took the post-test (32 in experimental group and 28 in the control). Attrition rate was 25%. Students were tested on reading and writing using the Metropolitan Achievement Test and the Terminal Units (T-Units) tests for both pre- and post-tests. MANOVA showed no intervention effects for reading and writing, but when outliers were removed, the experimental group seems to make bigger progress than control. This was because one control class had extremely high post-test scores, which skewed the results. This suggests that the two groups were not equal to begin with, and the researchers were dredging for positive results. The use of individual significance testing is incorrect. The study was not clearly reported and was given a low rating.

Steiner (2008) looked at the effects of a home-school literacy programme on 25 1st grade children. The intervention involved parents and teachers working together to integrate literacy practices at home and in school. Parents were taught how to support their children at home using school-based literacy practices, such as reading aloud and engaging in conversations using storybook reading. Teachers were shown how to integrate children's home learning practices with the school's literacy activities. Intervention parents kept literacy logs of reading activities at home. This is a quasi-experimental study using convenience sampling. Two teachers (one in treatment and one in control) from different schools were

selected based on their expressed interest in the project. Eleven parents who volunteered were recruited for the programme (six in the experimental group). Experimental parents and one teacher were placed in the treatment group and received training. The control group was made up of five other parents. There were 19 children in the control group (meaning that there were some without parents in the programme). Quite strangely none of the children in the control group had parents or teachers in the programme. It is not clear what happened to the children of the five parents who were in the control. Pre- and post-tests using the CAP (Concepts About Print), DIBELS (Dynamic Indicators of Basic Early Literacy) including fluency subtests and the DRA (Development Reading Assessment) were conducted and scores for treatment and control groups were compared using two sample T-tests. ANOVA was used to compare the differential effects of the intervention on the three groups of children (those whose parents and teachers participated; those whose teachers but not parents participated and those whose teachers and parents did not participate). The results suggest that there was significant difference in the post-test CAP scores of both treatment groups (parents and teacher participation and teacher only) compared to the control group. No significant difference was reported for all the other measures of literacy. The weight of evidence for this study is low for a number of reasons. First, the sample was very small ($n = 25$) and unequally distributed between control ($n = 19$) and treatment ($n = 6$). The six children were then further divided into two further groups (those whose parents and teachers were involved and those where only their teacher was involved). It is not clear how many children were in each intervention group. It is possible that there could be only one child in one of the groups. Little is also known about the characteristics of the children and their background. As the sample was not a randomised one, the use of statistical testing is not justified. Since only one school and one teacher were involved, the results cannot be generalised.

6.3 Conclusions

The review found nine studies of parental involvement with primary age children that showed unclear/negative outcomes. Six of these were deemed of low quality. Two were so small as to be negligible (five or six cases per arm), and another was so poorly described in terms of the sample reported that it is not possible to say how large or small it is. One, like so many summarised, completely misused the technique of significance testing. One dredged by trying to find a positive result through the removal of 'outliers' (possibly inconvenient results). In perhaps the best study, the comparison group performed substantially better than the treatment group.

There were a further 14 studies with positive, or elements of positive, results. All of these were of low quality. Again many of these studies were negligible in scale, with less than 20, 15, 14, 13, 9, and 7 per arm of the study respectively. Another study used a total of three cases. Other studies had high levels of attrition such as 31% and 26% in one of the groups after allocation. Three had no matching comparator (or maybe just a nearby school), one used a bespoke test that did not translate into real-life achievement and another relied on self-reported achievements only. Overall, there is no evidence here that primary age interventions to enhance parental involvement are generally effective in increasing children's attainment. In fact, the better studies suggest the interventions can be harmful. It may be important that all of the medium-quality negative studies so far are largely about training parents to act a little like teachers at home, whereas the medium-quality positive study involves parents and other adults meeting and working together in an institution of some sort. It is also noteworthy that when parental involvement has been compared to a classroom intervention with the same purpose, if there is a difference it is the classroom programme that is more successful.

Summary

- This chapter describes those interventions or evaluations of interventions for primary school-aged children.
- Twenty-three studies relate to such interventions.
- Fourteen reported positive outcomes.
- Nine showed negative or unclear outcomes. Three were rated medium.
- Studies in this category were rated low in terms of quality either because of the very small sample (one had only three cases), poor reporting, misuse of significant tests for non-randomisation (e.g. Albright 2002) or simply dredging for positive effects by excluding outliers in their analysis, high attrition from one group after randomisation; lack of matching comparators, use of students' own report of their own achievements or the use of bespoke tests. The use of such tests suggests that teachers can teach to the test, and is therefore not valid for testing publicly recognised qualifications.

CHAPTER SEVEN – PARENTAL INVOLVEMENT INTERVENTIONS FOR SECONDARY SCHOOL CHILDREN

The review found fewer interventions aimed solely at young people of secondary school age. This is presumably because of the widespread belief that earlier interventions will be more effective (Chapter Five).

7.1 Studies with positive outcomes

Ndaayezwi (2003) evaluated a programme which encourages schools to work with parents. Teachers visited the homes of otherwise non-involved parents in a rural area in the US. The purpose of the visits was to facilitate communication with parents about how their child was doing at high school. Families on the programme received between one and 20 visits per year. Participants were selected from 600 students from three high schools. Half of them were Black African American, most of whom were in receipt of free or reduced lunch. Using stratified random allocation the students were divided into two groups of 30, assigned to treatment (home visits) or control group. Outcome measures included the criterion-referenced Georgia High School Graduation Test of reading, writing, social studies, maths and science, and school attendance. The reported effect size for academic outcomes was 0.8. Interview data suggest that as a result of the intervention, parents were more aware of their children's activities, so children knew that they could not hide their misbehaviour or lack of achievement from their parents. The study was well reported, but the quality must be deemed low because 30 students in each group is nowhere near enough to achieve anything more than proof of concept. A disadvantage with this intervention is that it is labour intensive and calls for a lot of commitment from teachers, so implementation could be difficult if the numbers were large.

Epstein *et al.* (1997) looked at an interactive programme called Teachers Involving Parents (TIPS) on the writing and report card grades of 683 children in middle school (grade 6 and 8). They looked at the progress of the students over one year and compared their grades with their predicted grades, but they did not state how the students were selected. Using multiple regression analysis, a number of variables were controlled for, such as school attendance, family background, family income and prior report card grades and writing skills. The authors reported that parents' participation added significantly to writing scores as the year progressed, but they did not report effect sizes and there was no comparison group not

participating in TIPS, and so this claim seems unwarranted. As such, the quality of this study is low.

Van Voorhis (2001) also evaluated the effects of TIPS on secondary-school-age children. This is a quasi-experimental study involving 253 students from one middle school in the US (only 226 or 89% completed the survey) that lasted for 18 weeks. The intervention was the use of interactive science homework to include parents in their children's homework. Intervention students received instructions on how they can engage their parents (or adult family member) in homework assignment. Control students received similar homework but without instructions. Two teachers from each of grade 6 and grade 8 selected the classes for the study (it is not clear how the classes were selected). Six classes were assigned TIPS and four classes to the control. Accuracy of homework completion and completion rates, and science exam grades were compared. The author reported positive effects of TIPS on students' maths achievement. TIPS students achieved higher report card grades than control students even after controlling for background characteristics, prior attainment in science and teacher effects. However, the authors could not conclusively say that the better science performance by TIPS students was due to TIPS as the two groups of students were not significantly different in terms of homework completion and homework accuracy. This study was given a low rating because of a number of shortcomings in its design. First, there were no pre-test/post-test comparisons for the two groups to indicate the effect of the intervention on science achievement. Also both honours-ability classes in the 6th grade were assigned to TIPS and both average-ability classes to the control. 8th grade classes did not include low-ability students. Other limitations include the lack of standardised test scores. As teachers were not blind to intervention assignment, there is a possibility of bias in terms of the amount of time spent explaining homework assignments, and in grading.

Sirvani (2007) tested the effects of using a homework monitoring sheet on students' test scores. Parents in the programme received a one-page homework monitoring sheet twice a week informing them of their children's test scores. Control parents did not receive monitoring sheets except for the usual progress report every three weeks and a report card every nine weeks. The intervention lasted 12 weeks. The study involved 52 first-year secondary students from four algebra classes taught by the same teacher. Two of the classes were randomly allocated to experimental and two to control conditions. A large majority of the students were African American and Hispanics. Only 10% were White. Almost all the students were eligible for reduced/free lunch. Students' test scores in the previous year were used to establish baseline equivalence in ability for the two groups. The study reported positive effects on students' academic achievement. Treatment students

outperformed control students in five out of the seven tests and in the exam ($ES = 0.54$). Treatment students also completed more homework than control students ($ES = 0.64$). This study was rated low because of the very small sample (only 26 students in each arm). Because the teacher was not blind to allocation, this may have influenced their behaviour, for example, giving extra help to experimental students in the form of feedback or instructions to parents via monitoring sheet. It is also possible that participation in the experiment may alter parents' behaviour, such as providing coaching with homework or showing greater interest in children's schoolwork. So it is not just monitoring in terms of signing a sheet of paper, but greater awareness and interest generated as a result that may have led to improvement in children's outcomes.

7.2 Studies with negative/unclear outcomes

A further study, which evaluated the TIPS programme (see above), found no differences in post-test results between TIPS and non-TIPS students (Balli *et al.* 1997). This was a randomised controlled trial with two experimental groups and one control group to test the effects of TIPS on maths achievement. The two experimental groups differed in that one group had prompts to get family members involved, while the other group did not. Participants included 74 White children in grade 6 and their families from one middle school in the US. All the students in the three classes were taken by the same teacher and given the same homework with the same instructions. The only difference is that intervention students were prompted to involve their parents. Each class was randomly assigned to one of three treatments. Prior achievement, measured using the standardised test results from previous year, was used to establish equivalence between groups but not to compare with post-test results. Post-test was a researcher-developed test of maths problems; two of the 40 questions were taken from the 20 homework assignments. ANOVA indicated no differences between groups in post-test results. The authors concluded that higher levels of family involvement were not associated with higher post-test achievement. This study was given a low rating for the following reasons. First is the small sample size (with possibly fewer than 25 students in each arm, assuming equal distribution). Post-test was not a standardised test, so there is a question of validity. There was also no monitoring of implementation of the intervention in practice, e.g. no report of researchers visiting a sample of homes in the three groups. In other words, although the control group may not be given prompts to involve the family, and parents in the second experimental may not be prompted to involve, these family members may already be actively involved in their children's homework anyway. It was not clear if prior differences in the homework experiences of the three groups were established.

Kincheloe (1994) also looked at the effects of involving parents in their children's education using specially designed materials to enable parents to support their children in their maths course. The materials included explanations, definitions, formulas and examples of problems students are working on in class. Parents were given instructions on how to use these materials to work with their children at home. Participants were students from two maths classes in one high school in the US who volunteered to be on the programme. Of the 52 who were invited, only 28 responded (54%). These were then merely matched with their classmates based on their previous semester's maths results. Treatment and comparison students remained in the same class to ensure that they received the same instruction, but assignment to experimental conditions was blind to the teacher. The results were not promising. No clear differences were found between groups in terms of post-intervention maths scores. Because of the very small number of participants ($n = 28$) who volunteered to be on the programme (non-random assignment), the validity and reliability of the intervention may be compromised. The use of t-test to compare post-test scores of matched pairs was inappropriate, as the sample was not randomly allocated. There was no comparison of gain scores between groups, so it was not possible to detect the impact of the intervention. The outcome measures were based on teacher-assessed tests which may not have been tested for validity. Also a two-week intervention is too short a time to assess any real effects. Although the students were matched on prior maths performance, there was no control for family and other background characteristics. There was also no monitoring of the kind of help parents might have provided in addition to the instructional materials. It is possible that as a result of the study parents took more interest in their children's schoolwork. For these reasons the study was given a low rating. The lack of evidence of an effect does not suggest that the intervention is not effective. It has more to do with the poor design of the study than the intervention itself.

Garlington (1991) described the 'With and For Parents' project which is a dropout prevention programme to help low income minority parents to support their children so that they stay on in school until graduation. This is a family support project, which provides parents with the resources to enable them to track and monitor their children's performance at school. 'With and For Parents' worked collaboratively with the school in organising activities to involve parents, providing materials for parents and giving them the opportunity to share information. The intervention period was three and a half years and included 156 African-American families from one middle school in the US. Students were in transition from middle to high school (grade 6 to grade 9). These were merely matched with similar students from a control school. The final sample for the experimental group was 109 (representing an attrition rate of

30%). No data is available for the control group as there was no system of tracking for these students. The reported results were mixed. The researchers claimed that the programme was successful in reducing dropout. Dropout rate for experimental students was 15% compared to 20% for control students. Retention rate was not reported as the study ended before the graduation period. There was no improvement in terms of absenteeism. Both groups showed a steady increase. There was no conclusive evidence of a positive impact on academic achievement. Experimental students registered a 4-point decline in grades for the core subjects (maths, social studies, language and science) from grade 6 to grade 8. Experimental students reached near grade level at the end of 8th grade in language skills, but not in reading and maths. Control students, on the other hand, reached grade level in maths, but not language and reading. Although the results did not show positive impact on experimental group as a whole, the researchers insisted that the programme was effective at an individual level citing two students as examples of how their 'assistance, advice, intervention and advocacy' had made a 'significant impact on student achievement' (p. 145). This seems like dredging. The study was rated low on weight of evidence because there was no actual comparison between groups of achievement scores at grade 6 and grade 8 for core subjects, so it was impossible to test the impact of the intervention on academic achievement.

Tsikalas *et al.* (2008) examined the effects of the Computers for Youth Program (CFY) on children's academic outcomes. The programme involved parents monitoring their children's use of computers at home to facilitate learning in the home. The participants were 174 students, mainly from ethnic minority and disadvantaged background and underachieving in school. These students were invited to take part in the programme. ANOVA indicated that most of the differences in students' maths performance were explained by their prior attainment. Only a small proportion of the variance was explained by home computer use. There was no comparison group. This study was given a low rating for weight of evidence because of the small number of participants who were invited to take part in the programme, so the sample was not random, and there was also no comparison group. There was also no comparison of pre-test and post-test scores, so it is impossible to evaluate the effects of the intervention. There was also the issue of fidelity of treatment as there was no suggestion that computer use at home was monitored. Computer use at home was largely based on self-report responses.

Gipson (1994) evaluated a programme called the Parent Education Teaching System (PETS), the aim of which was to involve parents in their children's schoolwork by working closely with the school. Teachers first communicate to parents through a document that

details the course requirements, method of assessments, and attendance and discipline policies. The intervention lasted six weeks where parents had to meet with the teachers at least three times to discuss their children's performance and other behavioural issues. Teachers provided feedback on how parents can contribute to their children's homework and schoolwork. Parents had to agree to monitor, provide assistance and communicate with the school. Students also had to agree to a set of responsibilities in writing. The study was conducted in one middle school in the US. There seem to be inconsistencies in the reported number of students involved in the study, but in any case, data was available for 102 students. These included 32 in grade 6 (18 experimental and 14 control), 34 in grade 7 and 36 in grade 8 (20 experimental and 16 control). Participants were selected using cluster random sampling. The study reported mixed effects. T-tests comparing the gain scores between pre- and post-tests for maths, reading comprehension for PETS and non-PETS students showed that there was a significant difference in gains obtained for the combined scores on the Stanford Achievement Test and teacher assessed grades. However, the combined teacher numerical grades for maths and reading did not indicate any significant difference between PETS and non-PETS students. Disaggregated analysis by year groups and subjects suggests small differences. In fact, control students in grade 8 made bigger gains in maths, while those in the experimental group actually registered a loss. It was subsequently found that five of the experimental students were taking algebra while none were in the control group. This does not mean that the intervention had a negative effect. Rather it may be an indication that the groups were different and no baseline equivalence was established, suggesting that allocation to conditions might not be random. A number of factors, other than the intervention may explain the difference in performance of the 8th graders. There could be a teacher effect or students doing different levels of maths as it was suggested. It is not clear whether the teacher-assessed maths tests were the same for the control and experimental group. This study was rated low for a number of reasons. The first reason is the small sample size (102), which was further divided into three age groups and two experimental conditions. Second, perhaps because of the small sample, the researcher had to use the combined scores, which failed to detect differences. Also the pre-test scores for grade 8 experimental group for maths was very low compared to that of the control group. This could be a mistake, or it could be that the students in the two groups were not enrolled in a similar level of maths programme.

Although there were many parental involvement interventions pertaining to training parents to help their children, these were largely for primary and pre-school children. Only one was found for secondary-school-age children. Obviously the kind of training is different for parents of older children. Using a longitudinal, randomised block design, Spoth *et al.* (2008)

evaluated a programme called the Iowa Strengthening Families Program (ISFP) in 22 rural schools in a Midwestern state in the US. ISFP is essentially a parental competency-training programme where parents and their children attend seven training sessions conducted over seven weeks. These sessions involved discussions, games, skill building activities and videotapes to model positive behaviour and modelling appropriate skills. Schools were randomly assigned to one of three groups: seven-session of ISPF ($n = 873$), Preparing for a Drug Free Years (PDFY) or Minimal-contact control. Only 51% of families initially recruited completed the pre-test ($n = 446$). Of these 84% ($n = 374$) completed the post-test. Attrition in the six-year follow up was 31% (no differences in differential attrition). Pre-test equivalence was established for SES and other variables. Participants were predominantly White. To avoid self-selection bias the authors used intention-to-treat analysis. The results suggested that parental competency training has direct and indirect long-term effects on the academic outcomes (measured using students' and parents' self-reported grades) of secondary school age children. It is not clear why standardised tests were not used, although the authors justified its use explaining that 'past research has shown high association between self-reported grades and official high school transcripts' (p.77). Self-reported grades were based on students' and parents' overall general impression of what they thought was closest to the grades the students obtained in school. It was not in reference to any subject. Path analysis was used to determine the 'effects' of the intervention on students' self-reported and parents' reported grades, student engagement and their perceptions about school and their ability. The authors reported that the intervention increased parenting competencies and reduced student's substance-related risks in the 6th grade, which in turn, improved academic performance in the 12th grade, and school engagement in the 8th grade. Comparison of effect size of gain scores on student-reported grade for experimental and control group six years after intervention shows that there is little difference between groups ($d = 0.05$). Data for Time 3 (8th grade) was not available in the paper for calculation of the effect size. In fact, using parents' reported grades suggests that experimental students were doing worse than control students ($ES = -0.17$ for mothers' grades and $ES = -0.2$ for fathers' grades). This study was rated low for weight of evidence because the use of composite, impressionistic self-proclaimed or parents' estimated grades is not a valid assessment of academic performance. More importantly, the analyses used in the study were not able to establish the impact of the training on the level of parental involvement. It only showed the effect on parental behaviour. So we cannot say that increased parental involvement led to any improved outcomes. Also the participants were from predominantly White, two-parent families with relatively low proportion eligible for free/reduced lunch.

7.3 Conclusions

The review found fewer interventions aimed solely at young people of secondary school age. This is presumably because of the widespread belief that earlier interventions will be more effective. There were six studies reporting unclear/negative results overall, and all of these were low quality. These six studies include two very small samples, three that are just confusing about what the results really are, and one that suggests prior attainment is the key to outcomes. The latter is important because, if true, it means we cannot trust any studies that either do not take prior attainment into account or make it irrelevant by having large randomly allocated groups.

There were five studies reporting positive results. Four of these were of low quality, including some very small samples – with 30, 26 and even 14 cases per arm. The latter study also contains some negative results not clearly presented. One is substantially larger but has no comparator. Most of these studies represent needlessly wasted opportunities. Overall, on this evidence, it is currently not possible to conclude that the kinds of parental involvement interventions covered here will be effective in secondary phases.

Summary

- This chapter examines studies of interventions aimed at young people in the secondary school phase.
- Eleven studies relating to this age group were found.
- Five reported positive effects, only one was of medium rating.
- Six of them show that such PI interventions either did not have any or had negative impact on school outcomes.
- As with intervention studies for the earlier age groups, all (except one) of these studies were rated low on quality of evidence for similar reasons: small samples (under 30), unclear results, lack of comparison groups and no comparisons between results before and after intervention.
- The poor quality of the studies made it difficult for one to rely on their evidence. So it was not possible to conclude if these interventions were actually effective or not.

CHAPTER EIGHT – PARENTAL INVOLVEMENT INTERVENTIONS ACROSS AGE GROUPS

There were a small number of studies about interventions for children across age groups (e.g. from primary to first year of secondary, or from pre-school to primary). Three of these included a combination of strategies, two were about training parents and two involved getting parents to work with their children at home. One was a home-school collaboration intervention.

8.1 Studies with positive outcomes

Campbell and Ramey (1994) examined the impact of the Abecedarian programme which combined parental training, home support and specially tailored curriculum for pre-school and primary-school-age children. This was a longitudinal experimental study of an early childhood intervention for children from disadvantaged backgrounds, tracking children from infancy to age 12. The programme provided training to mothers on health and nutrition, behavioural management and toy making. Intervention families received medical care and support for food, housing and transportation. The control group also received health and nutrition supplements (e.g. fortified iron formula) to ensure that the groups were comparable in health. School-age children and their families were assigned a dedicated teacher whose job was to inform parents about what was happening in school and to support the child's learning, and to keep the school informed of what was happening in the home. A total of 120 families out of the initial 122 who were eligible (low social income group) participated in the study. Children eligible for the programme were randomly assigned to receive treatment in pre-school only (from infancy to age five), school age only (from age five to eight), from pre-school to school age (from infancy to age eight), or no treatment (control). Fifty-seven were in one of three treatment conditions and 54 in the control group. Attrition was relatively low, with 23 cases dropping out (about 20% for 12-year follow-up). This is generally a well-conducted carefully described study. However, it is too small for purpose. It would be small if all 97 eventual cases were divided into only a treatment and control group, but they were divided into four groups with the smallest of only around 15 cases (57/3 minus 20%). This is clearly insufficient, and means that the study is only of low quality overall. The results are promising, but due to the scale of the intervention, the duration and the multiple interventions involved (at school, with parents and home support) the question is whether it is feasible to replicate and expand the experiment. Intriguingly, for maths (0.89) and knowledge (0.82) outcomes the student in the pre-school treatment only condition (from infancy to age five) scored higher in comparison to the control than students with pre-school treatment followed

by school age treatment (0.5 and 0.69 respectively). This could just be the volatility of small numbers.

Hampton *et al.* (1998) evaluated a home–school partnership programme known as Project FAST (Family and Schools Together). It is a multi-component programme, but in this paper the focus was on the parental involvement component. The aim of the project was to encourage collaborative home-school partnerships through monthly parent workshops where schools informed parents about school activities and expectations, showing them how they could support their children at home, how to build children’s self-concept and other basic parenting skills. There were annual summer enrichment programmes and year-round interactions between school and home. Each cohort of children was assigned a teacher who stayed with them from kindergarten to 4th grade. The study reports the results for a group of 119 children from four schools in five classes. Children were already assigned to classes before teachers volunteered to participate on the programme, so the authors simply assumed that there would be no differences between children in treatment and comparison classes. There was no randomisation and no pre-test. Four of the five FAST classes scored substantially higher on reading and maths (using the Comprehensive Test of Basic Skills and the Terra Nova test), compared to non-FAST children and those in the school district more widely. The major problems here are the small scale, the lack of equivalence between the classes, and the fact that the FAST teachers were volunteers suggesting a pre-existing difference or bias. The quality of the study must be considered very low, despite the large differences encountered.

In earlier reports, Van Voorhis evaluated the effects of TIPS (Teacher Involving Parents), a home–school collaboration programme for primary (Van Voorhis 2011a) and secondary students (Van Voorhis 2001) separately. Here Van Voorhis (2011b) combined the results of three two-year studies which examined the effects of the programme on elementary school maths, and middle school language arts and science performance. To re-cap, TIPS involved activities that required students to interact with their parents at home via homework assignments. To encourage home–school communication parents were invited to send in observations, comments or questions about the skills demonstrated and the homework experience. TIPS students received interactive homework with instructions on how to involve family members in their homework. Non-TIPS students also received homework but without instructions for family involvement. Teachers in nine elementary and middle schools were randomly assigned to one of two intervention groups or a control condition. The two treatment groups either received TIPS for one year or for two. The number of teachers is not reported, and this is a serious omission because the only randomisation that took place was

at the level of teachers. There were 575 students in total, with 173 in the control, and 201 in each of the other groups. All groups are smaller than the minimum of 400 suggested in Chapter Three, but the problem is worse than this because the randomised sample is not actually of students but of a much smaller number of teachers. This study does not have sufficient power, but the problem is again even worse. Four of the schools were elementary, tested for maths, and five were Middle schools, tested for either language arts or science. This means that there were really three trials with different attainment outcomes that are not readily aggregated. This means, for example, that there are only 92 students in the elementary schools trials, of which only 28 were in the control. Although not reported as such, this means that the control group involved only one teacher. Because the numbers in each cell are small the author tries to correct for initial imbalance by conducting regression analyses. These are no substitute for individual randomisation of a decent-size sample.

Table 1 in Van Voorhis (2011b) reports the effect sizes for only some of the 15 outcomes considered in the text (all of the positive ones), and does not specify which outcome the negative effect size was for. This omission could signal bias in reporting. Worse than this, the effect sizes that are reported include one of every combination (the control versus each treatment group, and between the one and two year treatment groups). This means, with 15 possible outcome scores, that there are potentially 45 effect sizes to report. Of these, only 14 positive effect sizes appear in Table 1, presumably portraying the most promising of the three possible comparisons for each outcome. This looks like 'dredging'. None of the combination of comparisons showed any advantage for TIPS students in terms of their report card grades. There was a tiny difference in standardised test scores (presumably in different subjects but unspecified in the report) between TIPS for one year and the control (0.06), which given the unsuitable sample is irrelevant and indistinguishable from zero. The difference between TIPS for two years and the control was substantially larger (0.49). This suggests that if TIPS is effective it is only after two years that this is noticeable. However, the Tables in Van Voorhis (2011b) are remarkable for having no N. The reader has no idea how many students dropped or otherwise had no scores. Without this knowledge the results are almost useless. The website for TIPS training (<http://www.csos.jhu.edu/p2000/tips/training.htm>) says 'For more information on TIPS Interactive Homework or to request training workshops:' and then lists the author of this report (along with another author, Epstein, J., who has also previously reported success for TIPS). It is clear that there is a very real danger of conflict of interest here because the individual whose professional occupation involves providing the intervention to schools is also the sole evaluator. This all means that the quality is rated as very low.

8.2 Studies with negative/unclear outcomes

Brodsky *et al.* (1994) evaluated the Family Math programme, a form of training for parents in concepts and strategies about maths. The aim was to encourage children in elementary grades in the US to enjoy maths by getting their parents interested in as well. In this study, the intervention evaluated lasted 18 months involving two cohorts of students. The report is deficient in some details about the sampling and allocation, but it is clear that the cases were neither randomly selected overall nor randomly allocated to groups. This, as is distressingly common in this review, makes the use of significance testing completely inappropriate. The first cohort had 190 cases (including 89 in the comparison group). The treatment group were volunteers. The second cohort was made up of some students who were on the programme for two years and some newly recruited students including some from 7th grade. This cohort had 445 students (including 234 in the comparison group). Overall, Family Math made no difference to standardised maths test scores. This is not a large study, with the smallest comparison group being only 89, but the authors broke the groups into those with prior Family Math experience and others, to claim that the subset with prior experience in the treatment group showed gains. This is dredging. Overall, the sampling is messy, and the study is of low quality. There is no mention of response rates, dropout or any missing scores.

Another parental training intervention is a home-based reading intervention programme which trains parents to use similar teaching strategies as those used in school to teach their children to read at home (Williams 2008). This intervention was for younger children from pre-school to primary school age (aged five to nine). The study was a tiny randomised controlled experiment to evaluate the effects of the intervention on children's reading comprehension skills. Parents attended two training sessions to learn how to use the books and resources at home. The intervention lasted 12 weeks. Participants were from Black, low-income families who were invited to take part in the programme. Of the 100 parents who signed up, 70 eventually took part. Of these 35 were randomly assigned to control and 35 to experimental conditions. All children took a pre- and post-reading achievement test (Woodcock-Johnson III). Both groups showed improvements in reading scores pre- and post-tests, but there was no obvious difference in the gain scores between control and intervention groups. The sample size is presumably too small to detect a difference even if there was one. The authors did try to divide the sample into the four school grades and then portray success for the intervention in some grades, but the numbers are far too small to warrant such an approach. As with so many of the reported studies, this one did not provide enough information for reviewers to convert the results into standard effect sizes. It is therefore rated low.

Everhart (1991) evaluated the Take Home Computer Program (THC), an intervention involving parents monitoring children's use of computers at home for children across age groups. The intervention lasted six weeks where families were loaned computers, and shown how to interact with their children in a fun and enjoyable way using computers as learning tools. The intervention has a problem in that it is so dated because of the dependence on technology. The study is also of very low quality, largely because of the design and due to dropout. The intervention was intended to involve 119 at-risk students from 14 rural schools in the US. Subsequently, 49 of these did not want to take part and a further three changed schools and were, incorrectly, excluded from the analysis. A comparison group was created artificially of 72 students, of whom three dropped out and seven changed schools. For the remaining 129 in both groups, there was no difference in reading or comprehension between the two groups using the California Achievement Test. The authors wrongly used significance testing when comparing these two non-randomly allocated groups.

Fraser (1991) also evaluated the Take Home Computer Program (THC), an intervention involving parents monitoring children's use of computers at home for children across age groups. The study is of low quality. This is largely because the treatment group of 180 students were all volunteers whose parents were willing to attend a meeting and work together with their children. The comparison group of 127 pupils (307–180) was not involved, not in the schools involved in the treatment, and simply created to match the treatment in terms of observable characteristics. Despite this, the authors presented significance tests and p -values from MANOVA as though these could mean something when comparing two non-randomised groups. There was no overall difference between treatment and control scores on the Iowa Test of Basic Skills, meaning that there is no evidence that this intervention works. When broken down into sub-groups by age and subject (such as maths and reading), the numbers are very small, and some analyses show small positive and some small negative differences from the intervention. This is probably the volatility of small numbers.

Williams (1998) is another study, which looks at a home-school collaboration programme, and combines parental training with family support. It was part of the Chicago Centre for School Improvement (CCSI), a parent volunteer training programme. Parents attended a two-week training programme. These training workshops were not about training parents to teach their children (unlike for pre-school children), rather they were to demonstrate to parents how they could support their children at home and about behavioural management.

The study included 46 5th grade and 20 6th grade students in a treatment group, with 66 control students from another school. This scale is too small for purpose. Since neither the sample nor the allocation to treatment was randomised, the authors are in error in conducting significance tests and MANOVA to look for differences in outcomes on the Iowa Basic Skills Test. Also only 59% of the parents completed the intervention. The author reported significant results since the average score in reading was slightly higher for the treatment group. However, converting the results into an effect size shows this to be only 0.09, whereas the effect size for maths was -0.11. The author did not report this negative result. This is dredging. Overall, the quality of the study is low, and there is no evidence here that the intervention works as intended.

8.3 Conclusions

This is a very unpromising set of studies of parental involvement for children in transition between school phases. Five of the reports had negative/unclear outcomes, and all were deemed low quality. Two studies of the same intervention have very high dropout, another has clearly tried to dredge for positive results and does not report the negative ones properly. The other has both problems with high dropout and apparently selective reporting of results. The four reports claiming positive outcomes were generally just as poor. One had a cell size of 15, and another 28. One has no match between classes in the two groups, and another has a conflict of interest and reports only the successful results. The largest study in this chapter by some way (445+ cases) reports no difference in outcomes between the parental intervention treatment group and the others. On balance, this chapter provides no sound basis for claiming the success of all-age interventions to increase parental involvement.

Summary

- This chapter summarises PI interventions for children in transition between school phases.
- Eight such reports were found.
- Five showed negative or unclear results.
- Three reported positive impact of intervention on school outcomes.
- All eight studies were rated as poor in quality for a number of reasons: small samples, high rate of attrition, having no comparison groups, dredging for positive results and selective reporting (i.e. reporting only successful results and ignoring negative effects and conflict of interest. The developer of one of the interventions was also the only evaluator.
- These studies did not provide clear evidence of any positive effects of PI interventions for young people in transition phases.

CHAPTER NINE – CONCLUSIONS AND IMPLICATIONS OF THE REVIEW

In the wider review of individual and parent behaviours by Gorard *et al.* (2011), parental involvement was one of only a few areas where there appeared to be evidence of all four elements of a causal link to improved attainment at school. These elements were correlation between parental involvement and higher attainment, an appropriate sequence, a plausible explanation for how parental involvement might assist their child's attainment, and some examples of interventions. What this review has shown is that there are not many more such interventions that have been evaluated robustly, and more evidence that parental involvement does not work than previously imagined. The promise is still there but until a programme of robust development and evaluation is funded, we do not know, and it would be wrong to assume that policies or practice in this area will be rewarded with increased child attainment (whatever other benefits there may be). For those already committed to such policies or practices, the best advice we can give on such limited evidence appears in Appendix F. A summary for research users follows here, along with the implications for research funders, and researchers themselves.

9.1 Messages for users

For users such as policy-makers and practitioners, the key message from this review is that although increasing parental involvement sounds plausible, there is no solid evidence base for intervention yet, in most age groups and for most approaches. Where they are compared with parental involvement interventions, classroom interventions to achieve the same end currently have more evidence of effectiveness in raising attainment.

The most promising phase is pre-school and preparation for primary school. The most effective programme in this review, with long-term results, and based on some of the best evaluations, mixes parental involvement with an array of other intervention elements. Therefore, it is not possible to conclude that the parental involvement element has been effective. Nevertheless, it is worth noting that this programme is based on providing institutional support for parents and bringing them into the care centres and early classrooms. It is not a home-based intervention. In fact, overall, the impression from the review is that interventions are most likely to succeed when they are aimed at young children, and involve parents and staff meeting regularly in an institution, with parental training, ongoing support, and cooperative working with teachers.

There is very little evidence of promise from evaluations of parental interventions for children of later primary age, secondary age or across phases of schooling. Practical interventions here can be safely abandoned for the present, where the concern is chiefly with academic outcomes. Some specific kinds of intervention also have so little evidence of promise that they can be abandoned safely (if the concern is chiefly with academic outcomes). These include parents working on computers with their children. The remaining approaches can be classified into a number of broad groups. Simple parental participation in school events, like parents–teachers’ evening, or parents teachers associations, cake sales and other fund-raising events, is untested. There is no reason to believe such behaviour will influence attainment for disadvantaged children. Programmes that merely encourage parents to work with their children at home (i.e. without direct support or skills training), or seek to improve parent–child relationships appear to be ineffective. If neither the parent nor the child knows how to improve a skill like reading comprehension then mere aspiration or motivation is not going to help. Effective parental engagement is not just about getting parents to be interested in their children’s education or to help them with their school work. Many parents from all socio-economic backgrounds are already routinely helping with their children’s schoolwork, with low-income families just as likely to be involved as those from higher income homes. And such involvement does not significantly affect children’s performance. So, merely increasing parental involvement is not the answer in itself.

9.2 Messages for funders

Given the absence of high-quality evaluations encountered in this review, the first task of funders must be to remedy the situation. This can be done by calling for new primary research with specific characteristics, and ceasing to fund mere associational or supposedly explanatory work in this area. The new research should be a fair test of whether the most promising approaches to enhancing parental involvement actually work in the sense of cost-effectively improving children’s subsequent attainment. The research should involve several studies, both direct replications and of differing age groups, based in real-world settings. The design for each should be either a simple randomised comparison of a treatment and control group, or of an allocation using regression discontinuity. There should be around 1,000 pupils or more in each study, with very low attrition, perhaps through using a waiting-list design or other incentive to reduce post-allocation demoralisation, followed by an intention to treat analysis.

The procedures of the intervention and its evaluation should ideally be ‘blinded’ as far as possible, and for many steps this is simple (for example, by conducting the pre-test for all

cases before randomisation). The evaluation must be conducted by individuals with no concern for whether the intervention works or not, but concern only for finding out. The outcome measure used, such as a test of student learning, must be standardised, independent of the innovators of the intervention, and have real-world meaning (such as a link to Key Stage results). The intervention itself should be as simple as possible, not mixing parental involvement with any other elements of change or intervention (and applied only to the treatment group). After the intervention has been completed for one large group but not the other, both groups should be assessed or measured for the single pre-specified outcome that the intervention was intended to improve. The result should be based on a simple comparison of the outcomes or gain scores for each group.

This advice is quite generic, and will apply to other topic areas as well, but it is necessary because of the very low level of quality found, even among the best evaluations. The level of work encountered is so far from that needed to answer relevant questions for public policy that even adopting these rather basic recommendations would lead to a considerable improvement.

More generally, funders need to ensure that programmes and fields of research make suitable progress, or cease funding them. Research must work towards answers. This means that exploratory work is perfectly proper, but that when the results show promise the researchers must continue to developmental work, leading eventually to a fully-fledged trial. Good ideas must be pursued to a gainful end in this way and poor ideas discarded. Currently too much work is mired in a repetitive phase of exploration without progress. This is an unethical use of taxpayer and charitable funding.

9.3 Messages for researchers

To a large extent the implications for researchers follow those for funders. In this area, as in so many others, researchers must wake up to their ethical responsibilities to the public and to research funding bodies. They must see their work as part of an ongoing and larger research cycle working towards an evaluation (of what works, a theory, or an artefact such as curriculum materials). They must ensure that promising work moves to a trial or other suitably rigorous evaluation phase, and that unpromising work ceases. If they do not progress from exploration to development to trial then they must report that their early work is unpromising, so as to discourage wasteful investment of time and money by others. Finding out what does not work is therefore, almost, as valuable as finding what works.

Researchers must be independent of the interventions they are evaluating, and they must commission genuinely independent evaluations of any interventions they are developing. They must care far more about getting the correct answer to their research questions than about what that answer actually is. Almost as importantly, they must be more careful in describing and badging the kind of work they are currently conducting. They must eschew causal terms like 'impact' or 'influence' except where their research designs permit or where the use is clearly speculative.

Some of the generic problems with evaluation studies are quite alarming, and are nothing to do with those compromises sometimes necessary because of limited time, resources or data. Researchers are frequently quoting statistical significance and p-values with non-random samples not randomly allocated to groups, and this is as prevalent in supposedly peer-reviewed articles as in unpublished reports. And they are using the 'significance' levels to try and decide whether an intervention has been effective or not. This is a widespread error, based on ignorance of sampling theory, and it simply must cease. Researchers are also frequently presenting such analyses based on individual cases when they have allocated cases to treatment groups by classes, or even when there has been no allocation at all (such as when a matched comparator is created *post hoc*). A slightly less widespread but still important and dangerous problem is dredging for success. Many reports, even the better ones, are poorly written in the sense that they are vague or incomplete about basic facts such as numbers of cases, how they were selected and allocated and how much dropout or refusal there was. This may be carelessness. But some reports describe wider studies and several possible outcomes but only present the findings for outcomes that are deemed positive or desirable. This goes far beyond the possible file-drawer problem of unpublished negative findings. Authors themselves seem to want to bias the evidence base by cherry-picking their own results before publication. Nothing will improve until such frankly shoddy practices are prevented. This is a challenge for capacity building, and one that is unaddressed by high profile programmes such as the UK 'Quantitative Methods Initiative' (which are mostly trying to widen the existing invalid practices in this area).

In some instances, the lack of efficacy of these interventions may have had more to do with the recruitment and retention of participants than the intervention itself. An intervention to involve parents more, by definition, can only work if the parents wish to be involved. In fact, this difference in motivation could be the reason for the widely noted association between parental engagement and child attainment in the first place. Perhaps interventions will never be successful with the unwilling. Potential barriers to enhanced parental involvement include issues with parent work schedule and lifestyle, lack of confidence in communicating with

school, language, health problems, embarrassment about their own education, negative learner identities, inconsistent enthusiasm of teachers for the process, and a general lack of interest among some parents.

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APPENDICES

Introduction

The purpose of this review is to look for evidence of effective and successful parental involvement interventions that have been robustly evaluated. What we are looking for specifically is the causal evidence for these interventions and the mechanism that would explain why these interventions can be effective. Such evidence presented in this review is therefore very different to that presented in many previous studies and on which policies have been based. Much money has been spent on funding parental involvement programmes in the UK. Many of these programmes have not been rigorously tested and evaluated, have no evidence of impact or, if they do, are based on very amateurish evaluations. If policies and taxpayers' money are to be spent on such programmes, we need to be confident that the programmes funded have evidence of success. For these reasons, this review is therefore a necessary first step in identifying what programmes can be funded, what programmes can be ditched and which programmes can wait till it has been piloted and shown evidence of impact.

To demonstrate why policies based on weak evidence and/or poor research can be expensive, we present some examples below of parental involvement programmes that have been funded and the kind of evaluations that have been carried out as evidence of their success.

There is evidence that Government policies and many NDC (New Deal Communities) Partnerships have included parental involvement in their education projects (Lall *et al.* 2004). In the report by Lall *et al.* (2004) three NDCs were discussed. Among the projects funded by the three NDC were the provision of parent coordinators to facilitate relationship between schools and parents, the Home–School Links Project and an Outreach Programme. It was not clear if these strategies were supported by evidence. Parent co-ordinators, for example were introduced on the assumption ‘that for parents to encourage their children, it is necessary to have a relationship of mutual respect and trust between teachers and parents, and between parents and the school’ (Lall *et al.* p. 6). The report even went on to state that the project cost £216,758 in revenue spending and £4,000 in capital spending over three years. The strategies for the Home–School Links Project included running classes for both parents and children, involving parents in running a toy library, doing translation work for teachers and dedicating space for parents to drop in. A sum of £410,000 was allocated to the three-year project. Another initiative cited in the report included a support group for

parents where schools liaise with health, social services and voluntary organisations to provide such support services. This initiative was funded at a cost of £311, 777 for three years. On what evidence were these initiatives based is not clear, but what is clear is that a lot of money has been spent on them. Also whether these initiatives had any impact was not clear as Lall's (2004) report did not evaluate the efficacy of these initiatives. Despite not providing clear evidence of success the authors cited a number of examples where they claimed the initiatives had been successfully implemented. The authors' evidence of success was based on anecdotal accounts from the key players of the projects: headteachers, parent coordinators, outreach workers and parents. However, there was no indication of the number of parents, parent coordinators and stakeholders interviewed. The evidence in the report consists mainly, if not solely, on perceptions of interviewees, and there were no criteria for measuring success apart from interviewees' reports regarding the level of parental involvement and communication and engagement. As is well known, evidence based on individuals' perceptions and attitudes are notoriously biased. The authors claimed that the impact of these initiatives on attainment was difficult to measure.

'With regard to raising achievement it is difficult to link improved exam results with a specific parental involvement project. Research shows that parental involvement can enhance children's educational performance (Desforges with Abouchaar, 2003). One example of impact in terms of parental involvement linking to educational attainment is the Turkish GCSE project involving five children and their parents. Four out of the five parents had no formal qualifications and three of them had left school at the age of 13. The results were a staggering two grades at A*, seven grade A's and one pass. These children go on to secondary school with a GCSE already, which raises their attainment and self-confidence.' (p. 14)

To an undiscerning eye it would seem that the Turkish GCSE project had been a tremendous (or 'staggering' in the words of the authors) success. The question is whether the same children would have done equally well anyway if they had taken their GCSE in Turkish without the initiative. Again evidence based on only five children cannot be reliable especially when there is no counterfactual. A simple experiment with a comparison group involving a larger sample could easily establish the impact of the project. Similarly, the impact on attainment for the three initiatives cited (use of parent-coordinator, outreach programme and the home-school links project) could be easily established if comparison groups and/or pre-and post-test comparisons were used.

It is therefore dangerous to base policies on evidence such as this which are about non-evidence based programmes which have not been robustly evaluated. Policies based on small-scale anecdotal reports and on misplaced assumptions are not only a waste of taxpayers' money but also unethical.

Our review, therefore, takes the quality of studies seriously and considers only those that are relevant to the research questions and have met our inclusion criteria. Each piece of study is then judged according to a set of quality criteria and the evidence we place on their findings is then based on this quality assessment. In Appendix A and Appendix B we explain why a large majority of studies, some of which are very well known, have been excluded.

Appendix A – Excluded studies and their reasons for exclusion

Studies excluded at Stage 1 and the reasons for exclusion

After reading the abstracts, 660 reports were excluded, leaving 96. Some of these 660 studies are still discussed in this review, as they may be reviews themselves, or provide evidence on factors promoting or inhibiting parental interventions.

- **Non-academic outcomes (21)**

In this group are studies about interventions or evaluations of interventions related to parental involvement that have an impact on children's school behaviour or behaviour in general (e.g. social well-being, aggression reduction), which may have an indirect effect on academic performance.

- **Not directly parental interventions (96)**

There were several studies that were of interventions where parental involvement was a small component of a larger intervention such as the Child Development program (e.g. Battistich 2001) and studies where parental involvement was the end of the intervention with no evaluation of the impact on academic outcomes (e.g. Cohen 1999; Johnson 1997). In this group are also studies of association on the impact of parenting styles and parental involvement on school outcomes (e.g. Bettler *et al.* 2005; Chen *et al.* 1997; Cohen 1997; Cutrona *et al.* 1994; Hong *et al.* 2010; Hunter-Segree 2010; Kusterer 2009). There were also studies that were not directly about parental interventions, such as evaluations of Head Start program (e.g. McCoy 1994) and the Home Instruction for Parents of Pre-School Youngsters (Nievar *et al.* 2008).

- **Not RCTs/ experiments or primary research (9)**

These are studies that were excluded for not having the appropriate research design. They are either studies of association using secondary data and are not interventions using either experimental or quasi-experimental designs (e.g. Borden *et al.* 2010; Epstein 2005; Bal and Goc 1999; Weiss *et al.* 2006) and reviews.

- **Not regular children (18)**

This group includes studies where the subjects were children who were at-risk of behavioural problems (e.g. Walker 2009; Boggs *et al.* 2005; Kratochwill *et al.* 1999; McGilloway *et al.* 2012), children with disabilities (e.g. Gortmaker 2006; Patrikakou 2011), emotional problems (e.g. Evans *et al.* 1991), have visual impairment (e.g. McDonnall *et al.* 2012) and those with low birth weight (e.g. Kaarsen *et al.* 2008)

- **Not relevant to the topic (304)**

Although numerous studies that were not directly relevant to the review had been screened and excluded in the first stage from reading the title and brief abstract, in some cases where it was not clear from the abstract whether the piece of work was relevant or not, it was included in the first instance for further reading and judgement. This group includes those that were subsequently found to be not relevant from reading the abstract (and in some cases from reading full paper if it was not clear from the abstract).

There were some reports, which although were excluded, had been retained to provide background information regarding parental involvement interventions and factors that may promote or inhibit such interventions. There were some reviews that were not specifically systematic reviews. These were excluded from in-depth analysis but retained as they may offer information on relevant studies in the area. The number of records in these categories is given in the table below.

Background	Description of intervention	Promoting and inhibiting factors	Reviews
103	18	74	3

- **Background (103)**

These were generally about the impact of parental involvement on school outcomes, student well-being or behaviour. They included studies of associations or patterns of associations between parental characteristics, parenting styles on their effects on students' outcomes measures, and were not relevant to the research questions, but could be used to provide background information on the subject of parental involvement. For example, Altschul (2011), Anguiano (2004), Blair (2008), Jumu'ah (2010), Mattingly (2002). In this group are also general reviews of literature, e.g. Bohan-Baker and Little (2002).

- **Description of interventions (18)**

These were pieces of work that simply describe interventions or strategies to improve parenting skills or parental involvement. Examples included handbooks, manuals from organizations like the Harvard Family Research Project, The Hanen Centre and the Centre for Excellence and Outcomes in Children and Young People's Services.

- **Promoting and inhibiting factors (74)**

These included studies on factors that encourage or hinder parental involvement.

- **Reviews (3)**

Although reviews were generally excluded, those that involved systematic reviews have been included for detailed study if they are robust evaluations of studies. Including these studies allow us to assess and identify potentially promising interventions that we may have missed in our search.

At this stage a further 14 were excluded. Five were found not to be primary research or were not experiments (e.g. Reed *et al.* 2006). In another six, the outcome measures were not specifically about academic achievement (e.g. Benjamin and Wilkerson 2010). Three others were excluded because they were interventions involving unique groups of children, e.g. Native Alaskan (Eggleston, K. 1993) including one which was about cooperative learning in schools (Stevens and Slavin 1992).

In total 660 study reports were excluded at this stage.

Appendix B – Studies excluded at Stage 2

At Stage 2, 28 studies were excluded. These were:

1. Baker, C.N. (2010) does not measure attainment.
2. Bekman (2003) deleted because it is also available as a journal article
3. Bowen (1999) excluded because the outcome measure was not academic performance. Study reported outcome on parent–school communication.
4. Brown and Scott-Little (2003) – excluded because it was not primary research. It was a systematic review (retained for background information).
5. Caspe and Wolos (2006/2007) – excluded because it was not primary research, but a synthesis of studies on parental involvement (retained for background).
6. C4EO (2011), not primary research, but a report of research studies. Retained for background information.
7. Denton (2001) – excluded because it was not primary research. It was a collection of research reports (retained for background).
8. Department for Children, Schools and Families (2007) – excluded because it was a cost–benefit analysis of interventions, rather than the effects of the interventions on academic outcomes (retained for background).
9. Erion, J. (2006) (meta-analysis) – excluded because it was not primary research, but retained for background information.
10. Fishel and Ramirez (2005) – excluded because it was not primary research. It was a review of 24 studies from 1980 to 2002 (Background).
11. Gamoran *et al.* (2010) excluded because the paper analysed only child outcomes on social and emotional behaviour. Analysis of academic outcomes was not available at the time the paper was written.
12. Goodall *et al.* (2011) – not primary research, but a review of studies on parental involvement.
13. Henderson and Mapp (2002) - excluded because it was not primary research. It was a meta-analysis of 51 studies.
14. Johnson (1990) – excluded because of poor reporting, not enough information to make quality judgement, also dated.
15. Jones and Rowley (1990) excluded because it was a review of studies conducted prior to specified period.
16. Kreider *et al.* (2007) – excluded because it was not primary research, but a synthesis of research reports.
17. Mattingly, D. J. *et al.*, 2002 (review) – excluded because it was not primary research.
18. Mbwana, K., *et al.*, 2009 (review) – not primary research.

19. Nye *et al.* (2006) – excluded because it was not primary research. It was a meta-analysis of 19 RCTs from 1964 to 2000.
20. Padak and Rasinski (2006) – excluded because it was not primary research, but a description of the Fast Start program and a discussion of related studies about its implementation.
21. Persampieri *et al.* (2006) – excluded because the focus was on children with learning disabilities and behavioural disorder. The small sample size was also very small ($n = 5$).
22. Terzian, M. and Mbwana, K., 2009 – excluded because it was not primary research. It was a meta-analysis of 47 parent involvement interventions.
23. Van Voorhis (2001) – excluded because it was a duplicate paper also published as a conference paper.
24. Werdenschlag (1993) – excluded because it was not directly about parental involvement intervention.
25. Walberg and Wallace (1992) – excluded because it was a review of studies.
26. Davis-Kennedy (1996) – not available despite applications for inter-library loans.
27. Flood (2003) – not available despite applications for inter-library loans.
28. Johnson (1999) not available despite applications for inter-library loans.

A total of 68 studies were therefore retained in the final analysis for full discussion.

Appendix C – Reported impact of interventions by phase of schooling

	Types of interventions					
	Family support	Parental training	Parent–child reading	Home–school collaboration	Combined	Parents working with children at home
Pre-school	(n = 4)	(n = 11)	(n = 2)	(n = 1)	(n = 8)	(n = 0)
+	1	6		1	6	
+/-	2	5	2		2	
0	1					
-						
Primary	(n = 1)	(n = 11)	(n = 0)	(n = 7)	(n = 1)	(n = 3)
+	1	8		3		2
+/-		2		2	1	
0		1		2		1
-						
Secondary	(n = 1)	(n = 1)	(n = 0)	(n = 7)	(n = 1)	(n = 1)
+				4	1	
+/-	1			1		
0		1		2		1
-						
Across age	(n = 0)	(n = 2)	(n = 0)	(n = 1)	(n = 3)	(n = 2)
+		1		1	2	
+/-		1			1	1
0						1
-						
Total	6	25	2	16	13	6

(+) positive effects

(-) negative effects

(0) no effects/cannot be determined/inconclusive

(+/-) mixed

The most prevalent type of parental involvement interventions for pre-school children is parental training. This made up 42% (11/26) of all the parental interventions for pre-school children. Shared reading and family support also include an element of parental training, suggesting that 92% of all PI interventions for this age group involve training parents. Almost all these studies reported some positive effects, with the exception of St Pierre *et al.* 2005.

For primary-school-age children training parents to read to their children and to help them with their school work continues to be an effective way of involving parents that have an impact on their academic achievement, specifically on literacy. Eleven of such studies reported some positive effects on reading, reading comprehension, maths and science.

Secondary-school-age children, on the other hand, appear to benefit more from home–school collaborations than any other type of interventions. Five of the seven home–school collaboration programmes reported some positive impact. Nine out of 11 of the interventions for this age group include an element of home–school collaboration. Almost all the parental involvement interventions for this age group have an element of school collaboration or, at least initiated by the school.

Most of the interventions for children across age group are aimed at children from kindergarten (or pre-school) to lower secondary. 50% (4/8) of these interventions include an element of parental training. All four reported some positive effects.

Appendix D – Quality judgement of studies and the intervention effects on academic outcomes by phase of schooling

Table 1a Pre-school interventions, their impact and quality of evidence

Type of intervention	Reference (author/s and year)	Result (reported impact)	Quality judgment/ Comment
Parental training	Bekman (2004) <i>Training mothers in interacting with their children to promote school readiness</i>	<ul style="list-style-type: none"> Positive effects on literacy, but not numeracy <p>Results unreliable/outcomes unclear</p>	Low
	Boggess (2008) <i>Parents provided resources and materials to practice school readiness skills</i>	<ul style="list-style-type: none"> Positive effects on maths and reading 	Low
	Rhimes (1991) <i>School-based</i> <i>Parents trained to use classroom-related activities (teacher demonstration), and health and behavioural management</i>	<ul style="list-style-type: none"> No effect on reading achievement No effect on student attitude Positive effect on attendance 	Low
	Calnon (2005) <i>School-based</i> <i>Training parents in State Reading Test Skills</i>	<ul style="list-style-type: none"> Positive effect on reading 	Low

	<i>using literacy kits to be practiced at home</i>		
	Dieterich <i>et al.</i> (2006) <i>Home-based</i> <i>Training parents through play and learn using community mentors and family support.</i>	<ul style="list-style-type: none"> • Positive effect on children's cognitive development • Increase in mother's verbal scaffolding 	Low
	Fagan and Iglesias (1999) <i>Head Start project training of fathers on parenting skills, use of literacy and numeracy materials at home, outdoor activities and reflection of fathers' own childhood</i>	<ul style="list-style-type: none"> • Positive effect on school readiness (applied problems and letter word identification) 	Low
	Jordan <i>et al.</i> (2000) <i>School-based</i> <i>Family literacy project (project EASE) training parents in supporting their children's language skills by providing scaffolded activities which were stage appropriate</i>	<ul style="list-style-type: none"> • Positive effect on vocabulary, story comprehension, sequence, sound awareness (ending) and concept of print (reading) 	Low
	Klein (1990) <i>Parent education programme</i> <i>Programme is not explained as this is a re-analysis of data from previous study</i>	<ul style="list-style-type: none"> • Positive effect on cognitive competency and nonverbal language competency • No effect on verbal language and social competency and composite score 	Low
	Landry <i>et al.</i> (2011) <i>Home-based</i> <i>Parental training using Play and Learning</i>	<ul style="list-style-type: none"> • Positive effects on children's verbal responses and initiative • Positive effect on mothers' reading 	Low

	<i>Strategies to teach parents to read to their children</i>	<p>behaviour</p> <ul style="list-style-type: none"> • Positive effect on mothers' responsiveness • No analysis on reading ability 	
	<p>Starkey and Klein (2000)</p> <p><i>Home-based</i></p> <p><i>Training parents to support their children's development of math and early reading skills</i></p>	<ul style="list-style-type: none"> • Positive effect on informal maths knowledge • No effect on literacy 	Low
	<p>Mullis <i>et al.</i> (2002-2004)</p> <p><i>Home-based</i></p> <p><i>Training parents in parent-child interactions to promote dialogic reading, vocabulary development and print awareness among pre-school children</i></p>	<ul style="list-style-type: none"> • Positive effect on print awareness and receptive vocabulary test • No effect on basic concepts and other measure of vocabulary 	Low
Combination of parental training with parental support	<p>Chang <i>et al.</i> (2009)</p> <p><i>Early Head Start Research and Evaluation (EHSRE) project which combines training parents in linguistic and cognitive stimulation with parental support</i></p>	<ul style="list-style-type: none"> • Positive effects on mothers' linguistic and cognitive stimulation • Positive effects of mothers' parenting behaviour on children's Bayley MDI scores • No comparison of pre-post test scores and no comparison of treatment and control children 	Low

	Results unreliable/Outcomes are unclear	
<p>Kagiticibasi <i>et al.</i> (2001) <i>Home-based</i> <i>Turkish Early Enrichment Project which combines parental training and home instruction (adaptation of the HIPPY or Home Instruction Programme for Preschool Youngsters)</i></p>	<ul style="list-style-type: none"> • Short-term positive effects for 23 of the cognitive measures for children in educational settings but not in custodial or home settings. (Cognitive tests include various tests of intelligence and tests of academic achievement in Turkish, maths and general ability, grades/report cards) • Long-term positive effects of Mother Enrichment Programme <p>Results unreliable/Outcomes are therefore unclear</p>	Low
<p>Kagiticibasi <i>et al.</i> (2009) <i>Home-based</i> <i>Combines parental training and home instruction</i></p>	<ul style="list-style-type: none"> • Positive effects on children's development (knowledge of Turkish vocabulary) • Positive effects on social development for older children • No effect on children with very low cognitive skills <p>Outcomes are unclear</p>	Low
<p>Ou (2005)</p>	<ul style="list-style-type: none"> • Positive effects on children's cognition 	Medium

<p><i>School-based</i> <i>Chicago Child–Parent Center (CPC) Program combines parental involvement, comprehensive services and child-centered focus classroom strategies aimed at developing reading and language skills</i></p>	<ul style="list-style-type: none"> • Positive effect on grade retention • Positive effect on grade completion 	
<p>Ou and Reynolds (2010) <i>Chicago Child–Parent Center (CPC) Program combines parental involvement, home support, comprehensive services and child-centered focus on developing reading and language skills</i></p>	<ul style="list-style-type: none"> • Positive effect on cognition, school mobility and school commitment • Pre-school programmes benefit males more than females 	Low
<p>Pungello <i>et al.</i> (2010) <i>Centre-based</i> <i>Abecedarian Project</i> <i>Carolina Approach to Responsive Education (CARE) combines parental training and home support</i></p>	<ul style="list-style-type: none"> • Positive effects on general education, participation in post-compulsory schooling and gaining skilled employment 	Low
<p>Reynolds <i>et al.</i> (2004) <i>School-based</i> <i>Chicago Child–Parent Center (CPC) Program combines parental training, home support, classroom strategies and a range of comprehensive services, such as health and</i></p>	<ul style="list-style-type: none"> • Positive effects on attendance and high school completion 	Medium

	<i>nutrition services</i>		
	<p>Sheridan <i>et al.</i> (2011)</p> <p><i>School-based</i></p> <p><i>Combines training parents to show warmth and sensitivity with home support to encourage parents to participate in their child's learning.</i></p>	<ul style="list-style-type: none"> • Positive effects on reading, language and writing skills • No significant difference was found in the increase in Expressive Communication scores between control and experimental group using standardised norm-referenced measurement (PLS-4) 	Low
Parental training in shared reading	<p>Stevens (1996)</p> <p><i>Training parents to read to their children</i></p>	<ul style="list-style-type: none"> • Mixed effects Researcher reported - no significant differences between groups on communication and academic skills post-test - experimental group showed significant increase in Academic and Communication and on Expressive and Receptive tests but no analysis was carried out on language ability tests for control group - both control and experimental groups showed improvements in performance, but more so for the experimental group 	Low

		than for the control group	
	Lonigan and Whitehurst (1998) <i>Training parents to read to their children</i>	<ul style="list-style-type: none"> • Positive effect expressive vocabulary and verbal vocabulary • Negative effect on receptive vocabulary skills (more effective when combined with school teacher-paired reading) 	Low
	Garcia (2006) HIPPIY programme <i>designed to provide educational enrichment to at-risk children from poor and immigrant families.</i>	<ul style="list-style-type: none"> • Positive effects on reading and language arts, but not for maths 	Low
Home-school collaboration	Harvey (2011) <i>Family Development Credential (FDC) – a family support programme that trains service workers to help parents engaged in their children’s learning</i>	<ul style="list-style-type: none"> • No effect on school development delays • Positive effect on parental involvement (PI) for Black children • Negative effect on PI White children using untrained workers only 	Low
Family support	Necoechea (2007) <i>HIPPY, home visiting programme that supports and trains parents to help children</i>	<ul style="list-style-type: none"> • Positive effects on expressive language skills • No effect on receptive language and emergent 	Low
	Reynolds <i>et al.</i> (2011) <i>Child-Parent Center Education Program (CPC), provides educational and family support for</i>	<ul style="list-style-type: none"> • Positive effects on educational attainment (staying on in school, on-time graduation, attendance) 	Medium

<i>children aged 3–9</i>		
St Pierre et al. (2005) <i>Even Start Family Literacy Program, provides parenting education, joint-child literacy activities to children and parents from low-literate families.</i>	<ul style="list-style-type: none"> No effect on child literacy, parent literacy and parent–child interactions (Low level of participation and ineffective instructional services were possible reasons researchers gave for lack of impact) 	Low

Table 1b Primary school interventions, their impact and quality of evidence

Type of intervention	Reference (author/s and year)	Result (reported impact)	Quality judgement/ Comment
Parental training	Herts (1990) <i>Parental training in reading strategies</i>	<ul style="list-style-type: none"> • Negative effect on reading • Small positive effect for Black children 	Medium/Near medium
	Reutzel <i>et al.</i> (2006) <i>Training parents to read aloud with their children plus decoding</i>	<ul style="list-style-type: none"> • Positive effects on reading and writing 	Low
	Roberts (2008) <i>Training parents in reading strategies to use at home</i>	<ul style="list-style-type: none"> • Mixed effects • Positive effect on Running Records levels test • Negative effect on Word Knowledge and Concepts about Print compared to Control school children. There was little difference between treatment and control groups on four of the five tests. 	Low
	St Clair and Jackson (2006) <i>Family involvement training programme to train parents to support their children in their school curriculum</i>	<ul style="list-style-type: none"> • Positive effect on children's literacy except for picture vocabulary 	Low
	Fiala and Sheridan (2003) <i>Training parents to read to their child</i>	<ul style="list-style-type: none"> • Positive effects reported for reading (results unreliable) 	Low
	Goudey (2009)	<ul style="list-style-type: none"> • Positive effects on all eight measures of reading 	Low

	<i>Training parents to read to their children using word recognition strategies</i>		
	Sparkes (1995) <i>Training parents in parent-child interactive reading</i>	<ul style="list-style-type: none"> • Positive effects on reading ability, vocabulary and sight vocabulary • No effect on reading attitude 	Low
	Topping <i>et al.</i> (2004) <i>Duolog maths – training parents in home tutoring</i>	<ul style="list-style-type: none"> • Small positive effect on maths skills 	Low
	Rasinski and Stevenson (2005) <i>Fast Start programme, a home reading programme to train parents to read to their children</i>	<ul style="list-style-type: none"> • Positive effect on reading (particularly effective in improving reading fluency of low ability children) 	Low
	Warren (2009) <i>Training parents in teaching phonemic awareness on the phonemic awareness</i>	<ul style="list-style-type: none"> • No effect on children’s reading skills (no significant differences between groups on pre-post-test comparisons for Phoneme Segmentation Fluency and Nonsense Word Fluency) 	Low
	Wehrell and Chester (1994) <i>The Families Investigating Physical Science Activities Together programme – training parents to work at home</i>	<ul style="list-style-type: none"> • Positive effect on physical science achievement • Positive effect on science attitude • Bigger impact on children with low prior achievement • No effect on parental involvement 	Low
Home–school collaboration	Albright (2002) <i>Involves school giving information and guidance to parents about children’s</i>	<ul style="list-style-type: none"> • Mixed effects • Small positive effect on weekly spelling test, but • Negative effect on cumulative spelling test t 	Low

	<i>homework</i>	<ul style="list-style-type: none"> • No effect on homework completion and homework accuracy • No effect on communication between teachers and parents 	
	Davis (2004) <i>Use of home–school link materials</i>	<ul style="list-style-type: none"> • No effect on reading 	Low
	Bradshaw <i>et al.</i> (2009) <i>Family –School Partnership (FSP) programme involves using trained teachers and health professionals to train parents in teaching and behaviour management skills including literacy and numeracy skills.</i>	<ul style="list-style-type: none"> • Positive effects on reading and maths 	Medium
	Kyriakides (2005) <i>Involves parents in learning activities in school to strengthen parent-school partnership</i>	<ul style="list-style-type: none"> • Positive effects on children’s language, maths and social science performance 	Low
	Smith (2000) <i>Home literacy programme involving the use of literacy bags at home</i>	<ul style="list-style-type: none"> • No effects on reading and writing 	Low
	Steiner (2008) <i>Home literacy programme to encourage parents and teachers to work co-</i>	<ul style="list-style-type: none"> • No effects on all measures of literacy except Concepts About Print 	Low

	<i>operatively to integrate literacy practices at home and in school.</i>		
	Van Voorhis (2011a) <i>Teacher Involve Parents (TIPS) – involves training teachers to use TIPS (Teachers Involve Parents in Schoolwork) and teacher-developed materials which require students to work with an adult member of the family (parents) at home.</i>	<ul style="list-style-type: none"> • Positive effect on grade 2 maths (particularly for those with two years of TIPS) • Positive effect on increasing level of parental involvement in math homework (but not for science or reading) 	Low
Parents working with children at home	Adadevoh (2010) <i>Use of computer-based instruction with parental monitoring</i>	<ul style="list-style-type: none"> • Positive effects on reading, maths and language arts 	Low
	Luce (1993) <i>Family Math parental involvement program to encourage parents to work at home with their children</i>	<ul style="list-style-type: none"> • Effects cannot be determined 	Low
	Morrison (2009) <i>Home-Education Literacy Programme (H.E.L.P.), a family home learning programme which provides weekly homework activities for parents to help</i>	<ul style="list-style-type: none"> • Positive effect on reading comprehension • Positive effects on parental self-efficacy and level of involvement 	Low

	<i>their children with reading comprehension</i>		
Combination of parental training and home–school collaboration	Villiger <i>et al.</i> (2012) <i>LiFuS Program – a School/home-based program to train parents to support their children at home with their reading homework</i>	<ul style="list-style-type: none"> • Positive effects on enjoyment in reading and reading motivation • Negative effect on text comprehension 	Medium
Family support	McDonald <i>et al.</i> (2006) FAST (Family and Schools Together), <i>involves working closely with schools to get families together to form a support group, and empower parents to protect their child from risks while they are young.</i>	<ul style="list-style-type: none"> • Positive effects on academic achievements and social skills 	Low

Table 1c –Secondary school interventions, their impact and quality of evidence

Type of intervention	Reference (author/s and year)	Result (reported impact)	Quality judgment/ Comment
Home–school collaboration	Ndaayezwi (2003) <i>Involves teachers visiting homes of otherwise non-involved parents</i>	<ul style="list-style-type: none"> • Positive effect on academic performance (Georgia High School Graduation Test of reading, writing, social studies, maths and science) • Positive effects on school attendance and discipline 	Low
	Epstein <i>et al.</i> (1997) <i>TIPS – teachers involving parents in school work</i>	<ul style="list-style-type: none"> • Positive effect on writing and language arts report card grades 	Low
	Van Voorhis (2001) <i>TIPS – Use of interactive science homework to involve parents in children’s homework</i>	<ul style="list-style-type: none"> • Positive effect on maths achievement 	Low
	Balli <i>et al.</i> (1997) <i>TIPS – to encourage parents to be involved in children’s maths homework</i>	<ul style="list-style-type: none"> • No effect 	Low
	Gipson (1994) <i>Parent Education Teaching System (PETS), to enhance home–school communication to encourage mutual</i>	Mixed effects <ul style="list-style-type: none"> • Positive effect for the combined scores in maths and reading on the Stanford Achievement Test and teacher assessed grades 	Low

	<i>respect and trust between parents and teachers</i>	<ul style="list-style-type: none"> • No effect on the combined teacher numerical grades for maths and reading • Negative effect on maths for grade 8 experimental group 	
	Kincheloe (1994) <i>School-based parental involvement intervention to support parents in helping their children in maths homework</i>	<ul style="list-style-type: none"> • No effect on children's maths achievement 	Low
	Sirvani (2007) <i>Involves the use of homework monitoring sheet for homework assignment</i>	<ul style="list-style-type: none"> • Positive effects on academic skills and homework completion 	Low
Family support	Garlington (1991) <i>A dropout prevention programme to support parents in helping them to track and monitor their children's performance</i>	Mixed effect <ul style="list-style-type: none"> • Positive effect on reducing dropout • No effect on reducing absenteeism • No conclusive effect on academic achievement 	Low
Parents working with children at home	Tsikalas <i>et al.</i> (2008) <i>Computers for Youth Program (CFY) Involves the use of computers at home with an adult family member to facilitate learning in the home</i>	<ul style="list-style-type: none"> • No evidence of effect on maths performance (most of the differences in variance explained by prior attainment) <p>Also no comparison of pre- and post-test scores, so cannot ascertain effect of intervention</p>	Low
Parental training	Spoth <i>et al.</i> (2008) <i>Iowa Strengthening Families Program (ISFP) is a parental competency training</i>	Inconclusive results <ul style="list-style-type: none"> • Positive effect on parenting competencies • Indirect long term effects on academic performance 	Low

	<i>programme</i>	<p>and school engagement</p> <ul style="list-style-type: none"> Using student reported grades show small effect ($d = 0.05$) six years after intervention Negative effect if parents' reported grades were used (ES = -0.17 for mothers' grades and ES = -0.2 for fathers' grades) 	
Combination of home support and behavior intervention	Gonzales <i>et al.</i> (2012) <i>Bridges to High School Program – a preventive intervention to reduce problems associated with transition to secondary school</i>	<ul style="list-style-type: none"> Positive effect on GPA (particularly effective for children with low baseline GPA) Positive effect on student behaviour 	Medium

Table 1d – Interventions for across age group, their impact and quality of evidence

Type of intervention	Reference (author/s and year)	Result (effective/not effective)	Quality judgement/ Comment
Combined interventions	Campbell and Ramey (1994) <i>Abecedarian programme which combines parental training and home support using specially tailored curriculum for pre-school and primary school age children.</i>	<ul style="list-style-type: none"> • Long-term positive effects on intellectual development (IQ tests), reading and general knowledge • No similar effect on maths skills 	Low
	Hampton <i>et al.</i> (1998) <i>Project FAST combining parenting skill training, school encouragement and developing child's self-concept</i>	<ul style="list-style-type: none"> • Positive effects on reading, maths and language 	Low
	Williams (1998) <i>Home–school collaboration which combines parental training with family support</i>	<ul style="list-style-type: none"> • Positive effect on reading, but gains were negligible (ES = 0.093) • Negative effect on maths (ES = -0.11) This result was not reported by the researcher • Parents reported greater involvement and greater communication 	Low
Parental training	Brodsky <i>et al.</i> (1994) <i>Family Maths Programme to train</i>	<ul style="list-style-type: none"> • Positive effect on maths performance • Parents reported increased levels of involvement in 	Low

	<i>parents about concepts and strategies about maths</i>	school activities Outcomes unclear	
	Williams (2008) <i>Home-based reading intervention programme which trains parents to use similar teaching strategies as those used in school to teach their children to read at home.</i>	<ul style="list-style-type: none"> • Mixed effects • Both control and experimental groups showed increase in reading scores pre- and post-test, but no significant difference in gain scores between groups 	Low
Parents working with children at home using computers	Everhart (1991) <i>Take Home Computer Program (THC), an intervention involving parents monitoring children's use of computers at home</i>	<ul style="list-style-type: none"> • No effect on reading comprehension and total reading 	Low
	Fraser (1991) <i>Take Home Computer (THC) Program</i>	<ul style="list-style-type: none"> • Mixed effects <ul style="list-style-type: none"> - Positive effect on middle school maths but not reading - Negative effect on elementary school maths and reading 	Low
Home-school collaboration	Van Voorhis (2011b) <i>TIPS, involves activities that require students to interact with their parents at home via homework assignments. It's a homework programme to involve</i>	<ul style="list-style-type: none"> • Positive effects only for those on TIPS for two years • No effect on report card grades • Background variables (e.g. being White, prior attainment, free/reduced lunch eligibility better predictors of standardized test scores) 	Low

	<i>parents in schoolwork for maths, language arts, and middle school science classes.</i>		
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Appendix E – Summary of studies included in the review

Table 1 A brief description of the study, its design and impact evaluation of the intervention

Reference (author/s and year, country)	Type of intervention	Age group/phase of schooling	Outcome measures (Indicate academic outcomes, e.g. maths, reading or literacy)	Result (effective/not effective)	Research Design	Quality judgment/ Comment
<p>Adadevoh (2010)</p> <p>Impact of Home Computers with Computer Based Instruction and Parental/Guardian Monitoring on the Academic Performance of Underserved African American Elementary School Children in the Birmingham,</p>	<p>Parental monitoring</p> <p>Use of computer-based instruction and parental monitoring</p>	<p>Primary (age 9)</p>	<ul style="list-style-type: none"> • Pre- and post-test scores for <ul style="list-style-type: none"> - Reading - Maths and - Language arts <p>Using teacher-assessed tests</p>	<p>Large positive effects</p> <p><u>For language arts:</u></p> <ul style="list-style-type: none"> • Computer-based instruction with parental monitoring (group 2) had the most effect on language arts performance • computer use without parental monitoring had 	<p>Experimental Design with random sample: pre and post-test comparison.</p>	<p>A. Low due to small sample size</p> <p>B. Medium</p> <p>C. High</p> <p>D. Low</p> <p>A number of factors may have affected the validity of the study:</p> <ul style="list-style-type: none"> • Small sample size ($n = 28$)

<p>Alabama Public Schools</p> <p>(Alabama, US)</p>				<p>no effects on language performance</p> <p><u>For reading:</u></p> <ul style="list-style-type: none"> • Those using computers with and without monitoring performed better than those in the control group (ES $d = 1.17$; ES $d = 0.312$) • Children using computers with monitoring also outperformed those using computers without monitoring 	<ul style="list-style-type: none"> • Tests based on teacher developed assessments • No monitoring of parents to ensure that they adhere to the monitoring protocol.
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				<p><u>For maths:</u></p> <ul style="list-style-type: none"> • Children using computers with parental monitoring as well as those without parental monitoring outperformed those in the control group 		
<p>Albright (2002)</p> <p><i>Enhancing parent-teacher communication and parent involvement in children's spelling homework.</i></p> <p>University of Illinois, Chicago</p> <p>(Illinois, US)</p>	<p>Home–School Collaboration</p> <p>Involves school giving information and guidance to parents about children's homework</p>	<p>Primary</p> <p>(age 7, 2nd grade)</p>	<ul style="list-style-type: none"> • Children's weekly homework return • Homework performance (percentage of homework problems completed correctly) • Spelling test scores • Parents' and teachers' 	<p>No clear effects, possible negative effects</p> <ul style="list-style-type: none"> • There were no differences between groups on homework achievement • There is evidence of negative effect 	<p>Experimental design with random sample (<u>of the classrooms not the pupils</u>): pre- and post-test comparison.</p>	<p>A. Low</p> <p>B. Low</p> <p>C. Medium</p> <p>D. Low</p> <ul style="list-style-type: none"> • Small sample size ($n = 83$) • Unequal allocation to intervention ($n = 55$) and control group ($n = 28$)

			<p>perceptions before and after intervention collected via questionnaire</p> <p>(For the purpose of this review we report only the effects on academic performance)</p>	<p>week 1 the ES of mean differences in scores between control and intervention groups was $d = -0.13$. In week 4 the ES was $d = -0.62$.</p> <p>(It would seem the not only did the intervention not work, it is making it worse.)</p>		<ul style="list-style-type: none"> • Classes/teachers rather than children were randomised. So possibility of class mix or teacher effect • Intervention period of four weeks may be too short for effects to be realised • There was no monitoring of what parents actually did at home. Comparison parents, although not given information and guidance may be
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						providing such guidance anyway. There was no effort to find out from the two groups of parents what they actually did at home.
Balli et al. (1997) Family Involvement with Middle-Grades Homework: Effects of Differential Prompting (Midwestern US)	Home–School Collaboration (TIPS) Teachers involve parents in children’s school work using TIPS assignments	Primary (age 11–12, 6th grade)	Maths achievement	No effects No significant differences in post-tests results No comparison of effect sizes of gain scores	RCT with 2 experimental and 1 control: pre and post-test comparison.	A. Medium-Low B. Medium- Low C. Low D. Low • Small sample size ($n = 74$) • No comparisons of ES of gain scores between GPS so can’t judge the effect of intervention
Bekman (2004)	Parental training	Pre-school	• Literacy and	Positive effects	Quasi-	A. Low

<p>Early home Intervention to promote school readiness: A Turkish experience (Turkey)</p>	<p>Training mothers to promote school readiness</p>	<p>(age 5)</p>	<p>numeracy achievement</p> <ul style="list-style-type: none"> • Behaviour 	<ul style="list-style-type: none"> • Children taught by trained mothers showed improvement in both literacy and numeracy scores as compared to the control group. The differences in the scores were observed in the actual school performance as well. 	<p>Experimental Design: pre and post-test. Allocation to experimental and control conditions was not randomised</p>	<p>B. Low C. Medium D. Low</p> <ul style="list-style-type: none"> • The targeted sample is only low-income families. There is no explanation given that why some of the families (13) could not be reached or dropped (3) out from the intervention program. • The balance of girls (98) and boys (125) included in the sample is not
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						equal.
<p>Bogges (2008)</p> <p>Educating parents to increase student achievement in a High-Poverty School</p> <p>Ed D thesis</p> <p>(US)</p>	<p>Home learning</p> <p>Educational materials provided for home use</p>	<p>Pre-school to primary</p> <p>Kindergarten/1st grade</p>	<ul style="list-style-type: none"> Georgia Kindergarten Assessment Programme (GKAP) Parental surveys on belief of student readiness 	<p>Some improvement in GKAP scores</p> <p>Very little evidence: small sample, parental surveys almost meaningless</p>	<p>Quasi-experimental study with a pre-test and post-test design.</p> <p>Allocation to experimental and control conditions was not randomised</p>	<p>A. Low</p> <p>B. Low</p> <p>C. Medium</p> <p>D. Low</p> <p>Problems with the parental survey: too reliant on self-reporting</p> <p>Very small, specific sample</p>
<p>Bradshaw et al. (2009)</p> <p>Longitudinal impact of two universal preventive interventions in first grade on educational outcomes in high school.</p>	<p>Home-School collaboration</p> <p>Family-school partnership (FSP) intervention involves training school staff to help parents in teaching and</p>	<p>Primary</p> <p>(age 6, 1st grade)</p> <p>(Students followed from 1st^t grade through to aged 19)</p>	<ul style="list-style-type: none"> Attainment in grades 1–12 measured using the Kaufman test of educational achievement Special education service use data collected from official records. College attendance 	<p>Positive effects of FSP</p> <ul style="list-style-type: none"> Significant effects of FSP on maths and reading, but no gender differences CF intervention also shows 	<p>Longitudinal randomised controlled trial: block design</p>	<p>A. Medium</p> <p>B. Medium-High</p> <p>C. High</p> <p>D. Medium</p> <p>No major problems with attrition for a longitudinal study (total attrition rate 16%). The authors tested for</p>

(US)	behaviour management skills Running alongside the FSP is the classroom-focused intervention which emphasised learning and behaviour in the classroom		at age 19 was measured using the high school graduation records • Behaviour	positive effects on reading and maths		differences in key variables for control and experimental groups and found no significant differences.
Brodsky et al. (1994) Measures the impact of Family Math Programs in elementary grades on student and parent attitudes	Parental training to help children. Family maths' hands on.	Primary (4th to 6th grade)	The <u>main purpose is the measure gains on mathematics performance measures</u> (standardized tests). Other measures were:	Only two of the analyses showed statistical significance: a) Student in the experimental group who had prior family Math	Quasi-experimental design with pre and post-test. Students of the control group were randomly selected, but not	A. Low B. Medium C. Medium D. Low The main problem is for Internal Validity due to

<p>towards mathematics, student performance, and teacher behaviour. (US)</p>			<p>a) Students attitudes towards math b) Parents perception of their child and math c) Family involvement with the school d) Programs effects on teaching behaviour</p> <ul style="list-style-type: none"> • <u>The measure of academic performance was made by standardised test.</u> 	<p>experience showed higher gains in the standardised math performance measures than other groups b) Parents who attended Family Math reported increased involvement with their children's schools.</p>	<p>the experimental group. It is not completely clear, but apparently the participation was voluntary.</p>	<p>selection bias, because the participation was not compulsory. The study tried to control for this elements with the pre-test in both groups, however it does not solve the problem.</p>
<p>Calnon (2005) Family Involvement at Home: Increasing literacy achievement of diverse at-risk</p>	<p>Parental training Hands-on activities and 'literacy kits' for parents to use with children at</p>	<p>Pre-school Volunteer sample of at-risk students from economically disadvantaged schools in NW</p>	<ul style="list-style-type: none"> • State Reading Test (SRT) • Pre- and Post-test parent surveys Family and student activity logs 	<p>Improvement in SRT scores in the intervention group, lifting them out of at-risk category. Parent surveys revealed additional</p>	<p>Quasi-experimental design: pre and post-test comparison. Non-equivalent control and</p>	<p>A. Medium B. Low C. Medium D. Low</p> <ul style="list-style-type: none"> • Volunteer

<p>Kindergarten students</p> <p>Ed D thesis</p> <p>(US)</p>	<p>home.</p> <p>Workshops to train parents.</p>	<p>USA</p>		<p>time spent with children but these were completed only by intervention group.</p> <p>Activity logs not completed</p>	<p>experimental group.</p>	<p>sample, so potential bias</p> <ul style="list-style-type: none"> • Sample not representative • Parent surveys completed by one group only, therefore disregard • No corroboration through activity logs so we cannot be sure what was done • Limited intervention
<p>Campbell and Ramey (1994)</p>	<p>Parental training plus home support</p>	<p>Across age group</p> <ul style="list-style-type: none"> • Pre-school 	<ul style="list-style-type: none"> • IQ • Reading • General knowledge 	<p>Positive effects</p> <ul style="list-style-type: none"> • Long-term 	<p>Randomized controlled trial, with four</p>	<p>A. Low B. Medium C. Medium</p>

<p>Effects of early intervention on intellectual and academic achievement: A follow up study of children from low-income families.</p> <p>(US)</p>	<p>Abecedarian programme. Infant children were placed in day care centres with a specially designed curriculum</p> <p>Intervention at school age involves training parents in supporting their children.</p>	<p>(infancy through 3 years)</p> <ul style="list-style-type: none"> • primary aged children (5 to 8 years) 		<p>positive impact on IQ of experimental group</p> <ul style="list-style-type: none"> • Compared to control group, intervention children showed positive results on reading and general knowledge • No effect on maths 	<p>different groups.</p>	<p>D. Low</p> <ul style="list-style-type: none"> • RCT • The multiple components of the intervention make it difficult to isolate which aspect of the intervention can be attributed to the effects.
<p>Chang <i>et al.</i> (2009)</p> <p>Parental involvement, parenting behaviors, and children's cognitive</p>	<p>Multiple parenting support. Head Start Research and Evaluation (EHSRE).</p>	<p>Pre-school – age of 3.</p>	<ul style="list-style-type: none"> • Level of parental linguistic and cognitive stimulation • Cognitive and linguistic stimulation 	<p>Positive effects</p> <ul style="list-style-type: none"> • The study reports on the positive effects on the level of mothers' 	<p>RCT, longitudinal analyses with HLM.</p>	<p>A. Low B. Low C. Medium D. Low</p>

development in low-income and minority families (US)			(measured using Bayley Index)	participation and increased levels of cognitive and linguistic stimulation, <ul style="list-style-type: none"> • Parenting behaviour significantly associated with Bayley MDI scores 		
Davis (2004) The Impact of Parental Involvement: A Study of the Relationship between Homework and Kindergarten Texas Primary Reading Inventory	Home–School Collaboration Intervention is the use of School Home Link materials Control group was also involved in a	Primary (age 6)	<ul style="list-style-type: none"> • Reading ability Measured using the Texas Primary Reading Inventory (TPRI) for pre- and post-tests	No effects No difference between controlled group and treatment group in terms of their achieved results on TPRI.	Quasi-experimental with pre-post-test design.	A. Low B. Low C. Low D. Low <ul style="list-style-type: none"> • Children were allocated based on consent from parents • High attrition (out of 600, results

<p>Scores. Doctoral thesis (US)</p>	<p>reading intervention, but which does not involve parents</p>					<p>available for only 311) • Control group was also involved in a reading intervention • Baseline equivalence was not established</p>
<p>Dieterich <i>et al.</i> (2006) Impact of community mentors on maternal behaviours and child out comes (US)</p>	<p>Parent training and home support This is a home- based intervention to train mothers in responsive parenting, behavioural support, language stimulation and attention skills</p>	<p>Pre-school (Infants)</p>	<ul style="list-style-type: none"> • Children's cognitive development • Parenting responsiveness • Parenting intrusiveness 	<p>Positive effects for those where a mentor was used. • Children of MPALS showed improvement in cognitive development as compared with children in PALS • MPALS mothers also showed increase in verbal</p>	<p>Quasi- experimental design: Pre and post-test comparisons. Because the groups of mother were not randomly assigned they used propensity scores to try to control for group differences.</p>	<p>A. Low B. Medium C. Low D. Low • Participation based on consent of parents • Baseline equivalence not established • No close monitoring and standardisation of</p>

				scaffolding		implementation
<p>Epstein <i>et al.</i> (1997)</p> <p>Involving parents in homework in the middle grades</p> <p>(US)</p>	Home–School collaboration	<p>Secondary</p> <p>Middle grade (6th and 8th grade)</p>	<ul style="list-style-type: none"> • Writing scores • Report-card grades • Students' and families' reaction to TIPS 	Positive effects	<p>Quasi-experimental design with pre-post-tests comparisons. However, no comparison group.</p>	<p>A. Low</p> <p>B. Low</p> <p>C. Medium</p> <p>D. Low</p> <ul style="list-style-type: none"> • Study participants were not randomised • No comparison group • Inappropriate use of regression analysis, rather than effect size (but they can't do this as they don't have comparison group) • Performance was based on report card grades. <p>All these seriously</p>

						affect the validity of the study.
Everhart (1991) Parent involvement with at-risk students: a case study. (US)	Parents working with children at home using computers and monitoring	Across age group age 8/9 to age 14	<ul style="list-style-type: none"> • Reading achievement measured using CAT test • Parents' report of children's interest in reading • Parents' interest in supporting children's learning • Students' report of their level of involvement in THC • Teachers' observation of positive changes • Teachers' perception of parental involvement 	No effect	Randomised controlled trial with pre- and post-test comparisons	<p>A. Low B. Medium to Low C. Medium-Low D. Low</p> <ul style="list-style-type: none"> • The main issue is with the small sample size and high attrition, most prevalent in the experimental group. External validity is also an issue as only rural schools and those which met Chapter One criteria were included. • Although author reported no

						<p>major problems with implementation, there was no report of home monitoring to establish fidelity of implementation. There was also no report of what the control students were doing.</p> <ul style="list-style-type: none">• Report is clear and method of data collection and analysis were described in detail. Limitations of study were also acknowledged.
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<p>Fagan and Iglesias (1999)</p> <p>Father involvement program effects on fathers, father figures, and their Head Start children: A quasi-experimental study (US)</p>	<p>Parent training</p> <p>This is a Head Start programme which involves training of fathers on parenting skills, use of literacy and numeracy materials at home, outdoor activities and reflection of fathers' own childhood</p>	<p>Pre-school</p>	<ul style="list-style-type: none"> • Child's academic performance measured using the Woodcock-Johnson tests of achievement • Child's social skills • Parents' parenting skills 	<p>Positive effects</p> <p>Significant effects on applied problems and letter word identification.</p> <p>Children of high intervention fathers showed greater and positive gain scores than children of comparison low intervention fathers.</p>	<p>Quasi-experimental study with a pre-post-test control group design without random assignment – non-equivalent control group</p>	<p>A. Low B. Low C. Medium D. Low</p> <ul style="list-style-type: none"> • 34% attrition (96/146) • Non-randomisation • Because of other confounding variables (e.g. fathers' interest) the study is not able to convincingly attribute impact on intervention.
<p>Fiala and Sheridan 2003</p> <p>The study investigates the</p>	<p>Paired Reading (Parent tutoring via Parent reading).</p>	<p>Primary (3rd and 4th grades)</p>	<p>The dependent variable (outcome) was the fluency of total number of</p>	<p>Should not be considered a reliable result.</p>	<p>The study presents NO design. There is no control group</p>	<p>A. Low B. Low C. Low D. Low</p>

<p>effectiveness of a pair reading intervention using curriculum-based measurement (CBM). Does parent tutoring via Parent reading (PR) method with controlled reading material produce increased accuracy and fluency based on curriculum-based measurement probes from grade level materials?</p> <p>(US)</p>			<p>words read and accuracy. Different measures were made to document students' progress objectively.</p>	<p>Positive effect size was found for all participants, ranging from 0.652 to 2.038. In addition, for all three students, words correct per minute at follow-up were higher than their original baseline levels.</p>	<p>and a non-random sample of three cases.</p>	<p>No comparison group or the attempt to have a base line to compare pre and post test.</p> <p>Only three cases.</p> <p>Participants were not randomly selected.</p>
<p>Fraser (1991)</p>	<p>Parents working with children at</p>	<p>Across age group</p>	<p>Reading and Maths</p>	<p>Mixed effects</p>	<p>Quasi-experimental</p>	<p>A. Low B. Low</p>

Evaluation of Chapter I Take-Home Computer Program (US)	home using computers and monitoring	Elementary and middle school		- Positive effect on middle school maths but not reading - Negative effect on elementary school maths and reading	study with matched comparison group	C. Medium D. Low
Garcia (2006) The Impact of the Home Instruction for Parents of Preschool Youngsters (HIPPY) Programme on Reading, Mathematics, and Language Achievement of Hispanic English Language Learners	Home –School collaboration HIPPY: two-year home-based intervention with designed curriculum including role-playing and meetings with parents as well.	Pre-school 4 and 5 year-olds Economically disadvantaged students Hispanic origin	Reading, Mathematics and Language Texas Assessment Knowledge and Skills (TAKS) TerraNova SUPERA Composite Language Scale	Significant improvements in TAKS and TerraNova scores for intervention group, except in mathematics, compared to control. HOWEVER, sample groups were not pre-tested	Quasi-experimental design with comparison groups – only post-test.	A. Low B. Medium (small, specific sample) C. Medium D. Low • Sample size is small • Lack of pre-test makes study problematic • Intervention group were predominantly female, control

PhD thesis (US)						group predominantly male, so cannot rule out gender bias in results
Garlington (1991) Helping Dreams Survive: The Story of a Project Involving African-American Families in the Education of Their Children (US)	Home School Collaboration A dropout prevention programme that supports parents, providing resources and helping parents to track and monitor their children's progress.	Secondary (age 11–18)	<ul style="list-style-type: none"> • Dropout rate • Attendance • Academic achievement 	<p>No conclusive effect on academic achievement</p> <ul style="list-style-type: none"> • Experimental group showed a four-point decline in grades for maths, social studies, language and science between 6th and 8th grade. • Experimental group reached grade level at the end of 8th grade for language 	<p>Inadequate information about design. It seems to be a Quasi-experimental design with pre and post-test comparing control and experimental groups.</p>	<p>A. Low B. Low C. Low D. Low</p> <ul style="list-style-type: none"> • Not an experiment • No randomisation • No background data collected of participants • Study poorly conceived with no statistical analysis of outcome data • High attrition rate among experimental group (30%), not

				<p>skills but not for maths, and the reverse is true of control group.</p> <ul style="list-style-type: none"> • No effect on absenteeism • Slight effect on dropout 		<p>info provided for control group)</p>
<p>Gipson (1994) An analysis of the impact of a structured parental involvement program on student achievement, grades, discipline and attendance (US)</p>	<p>Home-School Collaboration Parent Education Teaching System (PETS) programme aimed to enhance home-school communication to encourage mutual respect and trust between parents</p>	<p>Secondary (age 11–13, 6th to 8th grade)</p>	<ul style="list-style-type: none"> • Standardised reading and maths achievement measured using Stanford Achievement Test (SAT) • Teacher-assessed grades for maths and reading • Pupil behaviour 	<p>Results are inconsistent</p> <ul style="list-style-type: none"> • Significant difference in gains for combined scores for all year groups in maths and reading for SAT and teacher-assessed • No sign difference when segregate by 	<p>Quasi-experimental design. Insufficient information about design. Participants were selected using cluster random sampling of students in three grades (6th, 7th and 8th grades). (Not clear if</p>	<p>A. Low B. Medium C. Low D. Low</p> <ul style="list-style-type: none"> • Not clear how combined scores were calculated (grade 8 experimental Ss's pre-test scores appear to be very low compared to control group. • Not clear why

	and teachers			<p>subjects and year groups.</p> <ul style="list-style-type: none"> • Both groups showed increase in disciplinary problems, with control Ss twice more likely to be suspended. 	<p>allocation to treatment condition was random as this was not reported.)</p>	<p>combined scores for all year groups were used in the analysis, rather than by year groups</p> <ul style="list-style-type: none"> • Differences in parental background and teacher effect not ruled out. • Also five Ss in experimental group were enrolled in algebra, but none from the control group.
<p>Gonzales, et al. (2012)</p> <p>Randomised trial of a broad preventive intervention for</p>	<p>Parental training</p> <p><i>Bridges to High School Program/Project</i></p>	<p>Secondary</p> <p>(mean age = 12.3 years)</p>	<ul style="list-style-type: none"> • Substance use • Internalising and externalising behaviour • Student behaviour 	<p>Long-term positive effects</p> <ul style="list-style-type: none"> • Positive impact on GPA 1 year 	<p>RCT: Three waves of measure (3 post-test); the design</p>	<p>A. Medium</p> <p>B. Medium</p> <p>C. Medium</p> <p>D. Medium</p>

<p>Mexican American adolescents (US)</p>	<p><i>o Puentes a la Secundaria</i> (Bridges/Puentes) Family-focused preventive intervention to reduce problems associated with transition to secondary school.</p>		<ul style="list-style-type: none"> • Student coping skills • Parenting skills • School engagement • Family cohesion 	<p>after intervention ($d = 2.97$). Intervention was particularly effective for students with low baseline GPAs.</p>	<p>presented no pre-test.</p>	<ul style="list-style-type: none"> • High proportion of non-participants (only 62% of eligible sample agreed to take part) • Over a quarter attrited by Wave 3 (no data available) • The multi-component interventions makes it difficult to be specific about what aspect of the programme is the most efficacious for which outcome.
<p>Goudey (2009) A parent involvement intervention with elementary school</p>	<p>Parent tutoring Involves training parents to read to children using pair-reading</p>	<p>Primary (age 7–9)</p>	<ul style="list-style-type: none"> • Reading fluency • Vocabulary • Knowledge of sounds of letters and their combinations 	<p>Positive effects • Children of parents using PR with WR strategies made</p>	<p>Randomised controlled trial (using a wait-list control group)</p>	<p>A. Low B. Low C. Medium D. Low • Small sample with</p>

<p>students: The effectiveness of parent tutoring on reading achievement.</p> <p>(Canada)</p>	<p>(PR) with and without the use of word recognition strategies (WRS)</p>		<ul style="list-style-type: none"> • Word segmentation and blending skills • Reading comprehension 	<p>the biggest gain scores between pre- and post-tests compared to PR only and control children.</p> <ul style="list-style-type: none"> • Children of PR only parents performed worse on three of the eight measures compared to control group. This suggests that for some measures, PR only can do more harm than no intervention at all. 	<p>57 cases for three groups (one control – waiting list).</p> <ul style="list-style-type: none"> • Sample included only children from families whose first language is not English. • Participants included only those who were already actively involved in reading to their children at home on a frequent basis. Few were from low-income families and over a quarter of parents completed university.
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						Therefore the findings cannot be generalised to other population.
<p>Hampton et al. (1998)</p> <p>Parent Involvement in Inner-City Schools: The Project FAST Extended Family Approach to Success (Ohio, US)</p>	<p>Home–School Partnership</p> <p>FAST</p> <p>It is a multi-component intervention with 3 year planned cycle involving the same teacher, and monthly parent meetings.</p>	<p>Pre-school (Kindergarten) to 4th grade.</p>	<p>TERRA NOVA and CTBS scores in Reading and Maths and Language</p>	<p>Positive effects</p>	<p>Research design is not clear.</p>	<p>A. Low</p> <p>B. Low</p> <p>C. Medium</p> <p>D. Low</p> <p>No pre- and post-test comparisons and possibility of teacher effect</p>
<p>Harvey (2011)</p> <p>The impact of the family development credentialing program on school</p>	<p>Family support</p> <p>The Family Development Credential (FDC) is a family</p>	<p>Pre-school (age 0–5)</p>	<p>School readiness measured by level of parental involvement and child development (evidence of</p>	<p>Mixed effects</p> <ul style="list-style-type: none"> • No significant differences in PI scores after implementation 	<p>Quasi-experimental study with a pre-post-test comparison group.</p>	<p>A. Low</p> <p>B. Medium</p> <p>C. Low</p> <p>D. Low</p> <ul style="list-style-type: none"> • Participation was

<p>readiness: Outcomes in family support, (US)</p>	<p>support programme that trains service workers to help parents engaged in their children's learning</p>		<p>delay/no delay)</p>	<p>between groups assigned to FDC workers with and those without training. • Intervention appears to be more effective for Black children than for White children.</p>	<p>Participants were not randomly selected.</p>	<p>voluntary • Some service workers were also trained in other parenting programme.</p>
<p>Herts (1990) This study examines the impact of a parental involvement programme on the reading achievement of 195 third grade students from five primary schools in one school district in the</p>	<p>Parental training in reading strategies</p>	<p>Primary (age 8)</p>	<p>• Reading ability • Parents' and teachers' perceptions of the programme.</p>	<p>Mixed effects In fact control group made greater improvement than intervention group ES between pre- and post-test for experimental group is $d = 0.46$, and $d = 0.532$ for</p>	<p>Quasi-experimental design with pre and post-test comparison. Units were not randomly assigned.</p>	<p>A. Medium B. Low C. Medium D. Medium-Low • Baseline equivalence of children was not established which could account for differences between children.</p>

US. (US)				control.		Pre-test scores of control children were higher than those in the intervention group
Jordan <i>et al.</i> (2000) The Effect of a Family Literacy Project on Kindergarten Students' Early Literacy Skills. (Minnesota, US)	Home learning (parent training)		Language and literacy skills. Peabody Picture Vocabulary Test-Revised (PPVT-R). Comprehensive Assessment Programme (CAP) subtests for vocabulary, story comprehension, sequencing, letter and sound recognition/awareness, concepts of print, environmental print and forming	Positive effect Project EASE participants made significantly greater gains than the control group on vocabulary, story comprehension, sequence, sound awareness (ending) and concept of print (reading) and in language skills The size of the effect varied	Insufficient information. Quasi-experimental design with pre- and post-test comparison. Not clear if classrooms were randomly assigned.	A Low B Medium C Low D Low Intensive and expensive to administer. No long-term data available. Interventions were not witnessed in the home so hard to say what was intervention and what was not.

			<p>words from invented spelling.</p> <p>Language, print and sound composites from the above.</p> <p>Home literacy environment (created from Home Support Variable)</p> <p>Home literacy activities (again, created).</p> <p>Parental attendance records.</p>	<p>according to the amount of participation (measured by completed book-related activities).</p> <p>The effect was greater on those children who scored lower in pretests than others.</p>		
<p>Kagıtcıbası et al. (2001)</p> <p>Long-term effects of early intervention: Turkish low-income mothers and children</p>	<p>Parent training + home instruction</p>	<p>Pre-primary to Primary (age 3 and 5)</p>	<ul style="list-style-type: none"> • Test of intelligence • Academic achievement in Turkish, maths and general ability 	<p>Positive effects</p> <ul style="list-style-type: none"> • Short-term positive effects for children in educational settings (+ve but not significant on 5 of 23) 	<p>Field experiment with a 3x2x3 factorial design.</p> <p>The first year of the intervention was devoted to baseline assessments; second and third</p>	<p>A. Low B. Medium C. Medium D. Low</p> <p>Measures were complicated and often adapted by the researchers</p>

<p>(Turkey)</p> <p>Two studies reported: 1 Study involved an examination over four years to the effect of two different types of early enrichment (intervention) child-focused (center-based) and mother-focused (home-based). Study 2 is a follow-up of Study 1 after seven years of the end of project intervention.</p>				<p>measures).</p> <ul style="list-style-type: none"> • Impact less obvious for children In custodial and home settings • However, this trend was reversed over time. Follow up results show mother enrichment Programme being the significant factor. • The combination of early education mediated through parents appears to be important. 	<p>year home intervention was applied; fourth year post-intervention assessments.</p> <p>Quasi-experimental design</p>	<p>themselves.</p>
<p>Kagıtcıbası et</p>	<p>Parent training +</p>	<p>Pre-primary to</p>	<ul style="list-style-type: none"> • Attitudes towards 	<p>Positive effects</p>	<p>Insufficient</p>	<p>A. Low</p>

<p>al.(2009)</p> <p>Continuing effects of early enrichment in adult life: The Turkish Early Enrichment Project 22 years later</p> <p>(Turkey)</p>	<p>home instruction</p>	<p>primary to adulthood</p> <p>Longitudinal study tracing participants from aged 3 and 5 to adulthood (mean age 25.7 years.</p>	<p>education/schooling</p> <ul style="list-style-type: none"> • Vocabulary • Age at first gainful employment • Occupational status 	<ul style="list-style-type: none"> • The combination of early education and mother enrichment programme appears to have positive effects on development which could be detected in early adulthood. • The intervention does not impact on all groups in the same way. E.g., early environment had an impact on male educational attainment but not female and 	<p>information about design. p. 769 “Mothers’ training followed an <u>experimental design</u>, as the training recipients were selected randomly. <u>Evaluation of the effect of educational, custodial, or home care environments involved a non-experimental design</u>’.</p> <p>Sample revisited 19 years later: 131 from the</p>	<p>B. Low -Medium</p> <p>C. High</p> <p>D. Low</p> <p>A useful longitudinal perspective on interventions, although original intervention was used in a very specific (Turkish) context.</p>
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				<p>mother training an effect on social development for older children.</p>	<p>original sample were included. No significant differences in characteristics between those retained and those unable to be contacted to take part. Mean age of participants here was 25.7 years.</p>	
<p>Kincheloe (1994)</p> <p>The effect of directed parental involvement in achievement (US)</p>	<p>School-based home intervention</p> <p>The intervention is a directed parental involvement in students' homework on</p>	<p>Secondary (High School)</p>	<ul style="list-style-type: none"> • Maths achievement measured using teacher assessed tests 	<p>No effect</p> <ul style="list-style-type: none"> • No difference between groups in post-test scores • Small correlation between number of times parents used 	<p>Insufficient information. Not sure but appears to be RCT with previous matching of units and then assignment to control or</p>	<p>A. Low B. Low C. Medium D. Low (poor design, lack of reliability and validity)</p> <ul style="list-style-type: none"> • Small sample size (n = 28)

	<p>maths achievement</p>			<p>materials and post-intervention scores ($r = 0.37$)</p> <ul style="list-style-type: none"> • No correlation between prior attainment and gains achieved from intervention ($r = -0.03$) • Those with higher prior attainment benefited more from intervention 	<p>experimental condition. 'Students were then matched based on their maths previous semester's maths achievement scores. Control and experimental students stayed in the same class to ensure they get the same instruction. Assignment to control/experimental condition was blind to the teacher.'</p>	<ul style="list-style-type: none"> • Non-random assignment (volunteers) • Results seem to suggest that those who did well prior to intervention had parents who were also more likely to use the materials more often.
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<p>Klein (1990)</p> <p>Parent involvement in early childhood education (US)</p>	<p>Parental training</p> <p>Re-evaluation of data from previous study. Unclear on what the intervention was.</p>	<p>Pre-school</p> <p>Children under 3 years</p>	<ul style="list-style-type: none"> • Kaufman Assessment Battery for Children (K-ABC) • Preschool Language Scale (PLS) • Balatelle Development Inventory Psychometric observations and parent questionnaires 	<p>Some effect suggested</p> <p>Children exhibited some increased levels of cognitive competency and nonverbal language competency.</p> <p>No differences in verbal language or social competency</p>	<p>Replication quasi-experimental ex-post-facto design. Inferential design to investigate relationships of some variables. Used extant data from previous study</p>	<p>A. Medium B. Low C. Low D. Low</p> <p>Limited sample size (41)</p> <p>Little detail of the intervention (this was secondary data analysis)</p>
<p>Kyriakides (2005)</p> <p>Evaluating School Policy on Parents Working With Their Children in Class (Cyprus)</p>	<p>Parents working in schools (Home-school partnership)</p>	<p>Primary (year 5 Cyprus)</p>	<p>External and teacher assessments used. Parental and student attitudes towards the 'school partnership policy' were measured by a questionnaire.</p>	<p>Positive effects</p> <p>66% of parents participated in 'the programme' (still not clear what 'it' was). Students in the intervention group</p>	<p>Quasi-experimental design with pre- and two post-test comparisons. Units were not randomly selected.</p>	<p>A. Low B. Medium C. Low D. Low</p> <p>Very limited study both methodologically (as far as is</p>

				<p>did better in test scores in three main subjects than in control school. However, did not examine other aspects such as motivation, personality for learning etc. or school environment in terms of leadership policies and teaching quality.</p>		<p>explained) and vague in concepts. It was not clear what effect the 'school partnership policy' had nor exactly what it entailed.</p>
<p>Landry <i>et al.</i> (2011)</p> <p>The Effects of a Responsive Parenting Intervention on</p>	<p>Parental training on shared reading</p>	<p>Pre-school (6–28 months)</p>	<p>Mother-child reading behaviours</p>	<p>Positive effects</p> <p>Improvements in maternal shared book reading behaviours</p> <p>Mothers'</p>	<p>RCT (to condition group)</p> <p>'randomised to either PALS or DAS.</p> <p>Subsequently</p>	<p>A. Low</p> <p>B. Medium</p> <p>C. Medium</p> <p>D. Low</p> <p>No actual analysis of reading ability</p>

<p>Parent–Child Interactions During Shared Book Reading, Developmental Psychology (US)</p>				<p>responsiveness showed greatest gain at PALS II Children showed gains in verbal responses and initiative.</p>	<p>randomised to either PALS II or DAS II'</p>	<p>and impact on later reading ability/behaviours Mothers did not read all the same books</p>
<p>Lonigan and Whitehurst, (1998) (US)</p>	<p>dialogic reading</p>	<p>Pre-school (age below 5)</p>	<ul style="list-style-type: none"> •Receptive vocabulary skills using the Peabody Picture Vocabulary Tests(PPVT-R) •Expressive vocabulary skills using the Expressive One-Word Picture Vocabulary Test (EOWPVT-R) •Verbal Expression subtest of the Illinois Test of Psycholinguistic 	<p>Mixed effects Statistically significant positive results were found for dialogic reading in the home and in school. This was particularly so in high compliance centres (frequency of teachers adhering to the reading schedule). Overall effect size in high compliance</p>	<p>Randomised controlled trial (6 weeks intervention programme): pre- and post-test comparison.</p>	<p>A. Low B. Medium C. Medium D. Low</p> <p>Validity was considered medium-low because of small sample size and no real randomisation as parents were volunteers.</p>

			Abilities (ITPA).	centres for EOWPVT was 0.41 (0.3 for school group and 0.74 for school plus home group). For the ITPA test the overall effect size was also medium at 0.44 (0.18 for school group and 1.19 for home group). SEE TABLE FOR MORE DETAILED RESULTS P. 71.		
Luce (1993) The effects of the Family Math parental involvement program on	Training parents to use materials to teach maths at home Family Math parental	Primary 4th and 5th grade (age 9 and 10)	<ul style="list-style-type: none"> • Maths achievement • Self-esteem • Attitude towards maths and school • Children's perceptions of parental 	<p>Cannot be determined</p> <ul style="list-style-type: none"> • No pre-post- test comparisons • No comparison of group means and 	<ul style="list-style-type: none"> • Quasi-experimental study 	<p>A. Low B. Medium-Low C. Medium D. Low</p> <ul style="list-style-type: none"> • No pre-post-test comparisons (so

<p>students' cognitive and affective behaviors and parents' attitudes toward education.</p> <p>(US)</p>	<p>involvement program</p>		<p>involvement</p> <ul style="list-style-type: none"> • Parents' attitudes and perceptions of children's school 	<p>no standard deviation reported, so cannot calculate ES</p> <ul style="list-style-type: none"> • Multivariate analysis showed that 5th grade Ss (in both groups) did better than 4th grade Ss in math achievement test. They also had higher self-esteem and better attitudes towards maths • Attitude towards maths was the most important explanatory variable for 	<p>cannot say if intervention was effective)</p> <ul style="list-style-type: none"> • No baseline equivalence was established between groups. • No comparison of group means. Results only reported comparisons of 4th and 5th grade Ss. Other variables like an extra year, teacher differences were not taken into account. • Parents were volunteers (possible bias) • Only half the
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				differences between groups.		parents volunteered and a quarter in experimental group were excluded because of inability to commit to training. <ul style="list-style-type: none"> • Sample size of 93 was not large enough.
<p>McDonald <i>et al.</i> (2006)</p> <p>After-School Multi-Family groups: A randomised controlled trial involving low-income, urban, Latino children (US)</p>	Parenting skills/family support	Primary 1st – 4th grade (age 6–10)	Teacher evaluations of socio-economic functioning and academic performance using Teachers' report Form (TRF) of the Child Behaviour Checklist, and Social Skills Rating System (SSRS)	Positive effects Very high engagement with programme (FAST) compared with virtually none in FAME) On both instruments, children assigned to FAST tended to	RCT (randomization of classrooms in 10 elementary schools) – teachers were blind to condition.	<p>A. Low B. Medium C. Medium D. Low</p> <p>FAME students decreased in these areas, so this may be preventative rather than enhancing. Different</p>

				<p>improve mean score test to follow up, particularly in TRF.</p> <p>FAST students scored significantly higher on social skills and teachers reported less aggressive behaviour in the classroom.</p> <p>Increased parental engagement in school.</p>		<p>interventions, not obviously controlled for different variables</p>
<p>Morrison (2009)</p> <p>The impact of a Family Home-learning Programme on Parental/Caregiver Efficacy</p>	<p>Home learning (Parents working with children at home)</p> <p>Home-Education Literacy Programme (H.E.L.P.)</p>	<p>Primary (age 6, 1st grade)</p>	<ul style="list-style-type: none"> • Reading comprehension 	<p>Positive effects</p> <ul style="list-style-type: none"> • Significant increases in reported parental efficacy compared to control 	<p>Quasi-experimental, with pre- and post-test.</p>	<p>A Low</p> <p>B Low</p> <p>C Medium</p> <p>D Low</p> <ul style="list-style-type: none"> • Parent and teacher data collected were

(US)	provides weekly homework activities for parents to help their children with reading comprehension			<ul style="list-style-type: none"> • Significant increases in parental involvement • Intervention group shows higher levels of reading 		<p>self-reported.</p> <ul style="list-style-type: none"> • Small study based in one rural district, results therefore not generalizable • Not sure if teachers were blind to allocation • Inappropriate use of significant test as sample was not randomised • Also there was a dropout of 3 students after intervention started
Mullis <i>et al.</i> (2002–2004) Florida State University Family	Home learning (Parent training)	Pre-school	<ul style="list-style-type: none"> • Vocabulary • Reading • Comprehension 	Positive effect Intervention group yielded greater change on print awareness and	Quasi-experimental design with pre- and post-test comparison.	<p>A. Low B. Low-Medium C. Low D. Low</p>

<p>Institute, Policy research and Evaluation Unit</p> <p>(US)</p>				<p>receptive vocabulary test.</p> <p>No effect on basic concepts and other measure of vocabulary</p>	<p>Participants were not randomly selected or allocated to control or experimental condition.</p>	<p>Small sample size ($n = 35$)</p> <p>Therefore, unclear results from very few parents.</p> <p>No random allocation to conditions (both internal and external validity would be an issue)</p>
<p>Ndaayezwi (2003)</p> <p>Parental involvement: The effect of home visits on academic achievement, discipline, and attendance of high-school students in</p>	<p>Home-school Collaboration/ Home visits</p>	<p>Secondary (age 15–18)</p>	<ul style="list-style-type: none"> • Reading, writing, social studies, maths and science achievement measured using the criterion-referenced <i>Georgia High School Graduation Test</i> (GHSGT) 	<p>Positive effects</p> <ul style="list-style-type: none"> • Experimental students performed significantly better than control students on the GHSGT (ES = 0.376; d 	<p>RCT only with post-test comparison.</p>	<p>A. Low B. Medium C. High D. Low</p> <ul style="list-style-type: none"> • The main issue could be the small sample (total of 60 divided into

<p>three public schools in Georgia</p> <p>Ed D dissertation</p> <p>(US)</p>			<ul style="list-style-type: none"> • Attendance • Discipline • Teachers' and parents' perceptions of the efficacy of the programme 	<p>= 0.8125101)</p> <ul style="list-style-type: none"> • Experimental students, on average, attended more days than control students (ES = 0.5880763; $d=$ 1.454185 • Experimental students had, on average, more referral-free days than control students (ES = 0.4653819; $d=$ 1.0515798 		<p>control and experimental condition)</p> <ul style="list-style-type: none"> • No details about how many were from each school or classes, or the type of schools • No breakdown disaggregation analysis by age, phase of schooling or school.
<p>Necoechea (2007)</p> <p>Children at-risk for poor school</p>	<p>Home-support literacy</p> <p>HIPPY- an early</p>	<p>Pre-school (age 3–5)</p>	<ul style="list-style-type: none"> • Oral language skills • Emergent literacy skills • Parent participation 	<p>Mixed effect</p> <ul style="list-style-type: none"> • Medium effect on expressive 	<p>Quasi-experimental design with pre- and post-test</p>	<p>A. Low</p> <p>B. Low</p> <p>C. Low</p> <p>D. Low</p>

<p>readiness: The effect of an early intervention home visiting program on children and parents. (US)</p>	<p>intervention, home visiting programme that supports and trains parents to help children</p>		<ul style="list-style-type: none"> • Level of parent involvement 	<p>language skills (ES = 0.35)</p> <ul style="list-style-type: none"> • No effect on receptive language or emergent literacy • No effect on parental involvement at home • Significant effect on parental involvement (ES = 0.87) when pre-test performance is taken into account • No correlation between language skills, emergent literacy and level of parental 	<p>comparison. Participants were NOT randomly selected (volunteers).</p>	<ul style="list-style-type: none"> • Tests of receptive abilities not valid as children and parents were trained in Spanish, but tested in English • Emergent literacy test was also not valid as the test was for older children (over 4), but intervention children were all under 4 and whose first language was not English. • There was also a question of fidelity as implementation of
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				involvement, and intensity of treatment or quality of home visits		treatment in the home was not monitored.
<p>Ou (2005)</p> <p>Pathways of long-term effects of an early intervention programme on educational attainment: Findings from the Chicago longitudinal study (US)</p>	Home learning/Home-School collaboration	Pre-school	<p>Educational attainment;</p> <p>Cognitive advantage, grade retention, Iowa Test of Basic Skills reading and maths scores in eighth grade.</p> <p>Family support juvenile court reports.</p> <p>Social adjustment</p> <p>Motivational advantage.</p> <p>School support</p>	<p>Positive effect</p> <p>Significant effect on:</p> <ul style="list-style-type: none"> • cognitive advantage: higher ITBS scores at kindergarten (0.36), • retention (-0.46), • higher school achievement and grade completed (0.21). <p>Preschool participation – greater parental</p>	Quasi-experimental design with multiple testing.	<p>A. Medium</p> <p>B. Medium</p> <p>C. Low-Medium</p> <p>D. Medium</p>

				involvement – higher grade completed.		
<p>Ou and Reynolds 2010)</p> <p>Mechanisms of effects of an early intervention programme on educational attainment: A gender subgroup analysis</p> <p>(US)</p>	Home learning/Home–School collaboration	Pre-school to Primary (age 3–9)	Reports on the same studies as Ou (2005) and Reynolds <i>et al.</i> (2004) but analysed data by gender.	Positive effects Parent involvement seemed more important for females. Males seemed to benefit more from preschool programmes.	RCT. Sample drawn from Chicago Longitudinal Study.	<p>A. Low B. Medium C. Low D. Low</p> <p>These are not causal relationships and may not be generalisable because of the sample.</p>
<p>Pungello <i>et al.</i> (2010)</p> <p>Early Educational Intervention, Early Cumulative Risk and the Early Home</p>	(Combination of parental training and home support) Abecedarian Project Carolina	Infancy/childhood predictors for early adulthood	<ul style="list-style-type: none"> • Educational attainment • High School graduation • Employment • Teen parenthood 	<p>Some effects</p> <ul style="list-style-type: none"> • A prospective measure of risk across first five years relates (negatively) to 	RCT of two early interventions: Abecedarian and CARE Should detail	<p>A. Medium-Low B. Low C. Low D. Low</p> <p>Argues that early intervention may</p>

<p>Environment as Predictors of Young Adult Outcome Within a High-Risk Sample (US)</p>	<p>Approach to Responsive Education (CARE)</p>			<p>same measures but intervention did not moderate that risk.</p> <ul style="list-style-type: none"> • Home environment appeared to moderate only general education achievement. • Early educational intervention seems to affect higher level accomplishments in young adulthood (e.g. skilled employment, PC education) but early risk affects basic-level 	<p>what is the design of Abecedarian Project.</p> <p>'Analysis of data from two longitudinal studies of cohorts involved in the above interventions.</p> <p>Two sets of analyses were carried out - the simultaneous effects of treatment and risk, and the mediating effects of early risk and home environment on young people's</p>	<p>help to 'boost' children so they can go on to achieve.</p> <p>Home environment may be more significant and getting children out of harmful early environments may make the difference: early intervention may be more protective than enhancing.</p>
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				accomplishments (such as high school graduation, employment, early parenthood).	outcomes.'	
<p>Rasinski and Stevenson (2005)</p> <p>The Effects of Fast Start Reading: A Fluency-Based Home Involvement Reading Program, on the Reading Achievement of Beginning Readers (US)</p>	<p>Parent training in reading strategies</p> <p>Fast Start parent tutoring, training parents to read to their children. They were given instructional and reading materials to use at home.</p>	<p>Primary (age 6)</p>	<ul style="list-style-type: none"> • Letter /word identification • Vocabulary • Reading fluency 	<p>Positive effects</p> <p>Both experimental and control groups made huge improvements between pre- and post-tests for both reading tests, but experimental group made bigger progress.</p> <p>The intervention was particularly effective in</p>	<p>RCT</p> <p>p.113 'based on pre-test, equal number of students were placed into one of three reading-development categories'</p>	<p>A. Medium to Low (small sample size, volunteers)</p> <p>B. Medium to Low</p> <p>C. Medium</p> <p>D. Low</p> <ul style="list-style-type: none"> • Small sample size of 30 (15 in each group), participants were mainly Caucasian volunteers which may affect the validity and reliability of the

				improving the reading fluency of children in the lower ability group.		<p>study. Not generalisable.</p> <ul style="list-style-type: none">• Both groups of children improved between pre- and post-test, suggesting other factors other than the intervention (e.g. natural maturation, school existing reading programme).• The improved performance for the lower ability experimental group in the post-test may just be a regression to the mean effect or it could be a fluke
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						as the jump was substantial. Given the very small sample size, small changes can bring big results.
<p>Reutzel et al. (2006) Examine the impact of the <i>Words-to-Go</i> programme on first grade students' reading and writing progress. Pre- and post-test comparisons of experimental and matched comparison students were conducted.</p>	<p>(parental training to read aloud with their children)</p>	<p>Primary 1st grade (age 6)</p>	<p>-Post-tests for reading and writing were carried out using the <i>Systematic Sequential Phonics They Use assessment</i> and the <i>State Core Assessment End-of-Level Test in Language Arts</i> (p. 132) -Parents and teachers perceptions of the program were assessed through</p>	<p>Positive Effects <u>For Reading</u> - There was a statistically significant effect of the treatment in favour of <i>Word-to-Go</i> (WTG) children. WTG children read significantly more words correctly than <i>Non-Words-To-Children</i> (NWTG). Large ES</p>	<p>Quasi-experimental non-equivalent group design with pre- and post-test comparison. It is not clear how control and experimental groups were matched and which variables were used for matching.</p>	<p>A. Low B. Medium C. High D. Low Only issues were with a relative small sample (see above), non-random assignment to conditions, and also with the fact that only 65% of parents in experimental group</p>

(US)			<p>distribution and analysis of the evaluation survey. Several Words-to-Go focus groups meetings were also held at the school to get feedback.</p>	<p>reported with WTG children scoring an average of 4.3 points higher than NWTH group. <u>For Writing</u> – Significant positive effects of programme on writing. WTG children misspelled fewer words than those in the comparison group. Large ES reported with WTG children scoring an average of 1.5 points higher than comparison group.</p>		<p>attended training sessions.</p>
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<p>Reynolds <i>et al.</i> (2004)</p> <p>Paths of Effects of Early Childhood Intervention on Educational Attainment and Delinquency (US)</p>	<p>Combination of classroom strategies and home support</p> <p>Child–Parent Center Education Program (CPC), provides educational and family support for children aged 3-9</p>	<p>Pre-school</p>	<ul style="list-style-type: none"> • High school completion by age 20 • Official juvenile arrest by age 18 	<p>Positive effects of CPC on attendance and high school completion</p>	<p>Lack of Information</p> <p>Quasi-experimental design with previous longitudinal data (matched group design)</p>	<p>A. Medium B. Medium C. Low-Medium D. Medium</p> <p>CPC is a composite of programmes involving classroom</p> <p>Not clear which aspects of the programme are specifically to do with parental involvement and therefore hard to isolate specific programme factors. The complexity does not allow for direct causal findings.</p>
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<p>Reynolds <i>et al.</i> (2011)</p> <p>School-based early childhood education and age-28 well-being: effects by timing, dosage and subgroups</p> <p>(US)</p>	<p>Parental support</p> <p>Child–Parent Center Education Program (CPC), provides educational and family support for children aged 3–9</p>	<p>Pre-school but with extended 4–6 years</p>	<ul style="list-style-type: none"> • educational attainment • high school completion • SES at age 28 • health status • behaviour • crime and justice system involvement 	<p>Positive effects</p> <p>Positive effects of pre-school, school age and extended intervention on educational outcomes</p> <p>Pre-school Participation had the most consistent and lasting effects for education, SES, health behaviour, and crime.</p> <p>School-age participation Effects were limited to education mainly</p> <p>Extended intervention</p>	<p>Quasi-experimental design, longitudinal study with matching on age, eligibility and family poverty</p>	<p>A. Medium</p> <p>B. Medium</p> <p>C. Medium-High</p> <p>D. Medium</p>
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				<p>Effects were limited to education, economic well-being and health insurance coverage. High dosage of school-age participation of two to three years was linked to high school graduation, although the length of pre-school participation was unrelated to all well-being measures</p>		
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<p>Rhimes (1991)</p> <p>An early intervention parent training program: The effects of training low socioeconomic status parents to work with their children in the school and in the home</p> <p>(US)</p>	<p>Parent training in the use of classroom-related activities</p> <p>Parents were trained to use classroom related activities</p>	<p>Pre-school (age 5)</p>	<ul style="list-style-type: none"> • Academic achievement measured using the Metropolitan Achievement Test-6 Form L (MAT6) • Student attitude • Attendance 	<p>Some effect</p> <ul style="list-style-type: none"> • T-tests showed no significant differences between groups on post-test reading scores • But there was a medium effect size difference btw groups in reading achievement (ES = 0.496) • No significant differences btw groups in terms of student attitude and (no ES difference) • No differences in achievement 	<p>Quasi-experimental design. Assignment to control and experimental conditions, however, was not random.</p>	<p>A. Low B. Medium C. Medium D. Low</p> <ul style="list-style-type: none"> • Parents were volunteers, but allocation to condition was random • Sample not large enough (20 in each arm) • Clear reporting
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				btw boys and girls. <ul style="list-style-type: none"> • Significant differences in school attendance between groups 		
Roberts(2008) The effects of parent training on the reading achievement of first graders Dissertation (US)	Training parents in reading strategies to use at home	Primary (age 6, 1st grade)	<ul style="list-style-type: none"> • Reading achievement • Student attitude • Parent attitude 	No obvious effect Of the nine measures, control groups made greater gains than intervention group in pre-post-tests comparisons. The most convincing effect of the Intervention was in Oral Reading fluency	Quasi-experimental study with pre and post-test (not clear how students were selected, and assignment to control and treatment groups was not randomised)	A. Low B. Low C. Low-Medium D. Low <ul style="list-style-type: none"> • Both schools were already involved in a Title 1 Reading programme. So the effects (especially the impressive performance of children in School B) could be the

				<p>(treatment made significantly bigger gains than control group)</p> <p>Comparing scores at the end of first grade with that of the beginning of 2nd grade on the DIBELS and criterion-referenced tests showed no differences between control and experimental groups.</p>		<p>result of the effect of other programmes.</p> <ul style="list-style-type: none"> • Non-random allocation of students, the lack of baseline equivalence between control and treatment groups, and that teachers were not blind to allocation may have jeopardised the integrity of the study. • A large number of parents were not able to attend the training sessions. Therefore those
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						who attended training may be different to those who could not.
<p>Sheridan <i>et al.</i> (2011)</p> <p>A randomized trial examining the effects of parent engagement on early language and literacy: The Getting Reading Intervention (US)</p>	<p>Home–School collaboration (Parental training and home support)</p> <p>‘Getting Ready’ is a parent engagement and family–school collaboration intervention to facilitate school readiness among pre-school children from disadvantaged background.</p>	<p>Pre-school (mean age 43 months)</p>	<ul style="list-style-type: none"> • Language and literacy skills 	<p>Not convincing results</p> <p>Significant positive effects using teacher reports, but no effects when measured using standardised, norm-referenced tests</p>	<p>RCT with pre and post-test comparison.</p> <p>Took place in 29 classrooms in 21 different schools over 4 years. Total sample of 216 pupils</p>	<p>A. Low B. Medium to Low C. High D. Low</p> <ul style="list-style-type: none"> • Teachers were not blind to allocation to treatment and control ‘Both treatment and control teachers received coaching to minimise awareness of group assignment, but emphasis

						<p>differed'</p> <ul style="list-style-type: none">• It is not clear whether the intervention effects were the result of greater parental engagement or improvement in the quality of classroom instruction as a result of the training and coaching• Research design does not allow evaluation of child's school readiness as no follow-up data were collected when children
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						<p>transition to kindergarten and early grades. Therefore the effects of the intervention on school readiness cannot be established.</p> <ul style="list-style-type: none"> • High attrition rate (46%) meant that the statistical power to detect intervention effects might be limited.
<p>Sirvani (2007)</p> <p>The Effect of Teacher Communication with Parents on Students'</p>	<p>(parental monitoring of homework)</p> <p>Intervention involves the use of Homework</p>	<p>Secondary</p>	<ul style="list-style-type: none"> • Test scores in algebra • Exam grades • Overall grade • Homework completion 	<p>Positive effects</p> <ul style="list-style-type: none"> • Experimental students performed better than control Ss in 5/7 tests, 	<p>RCT with the randomization of four classrooms.</p>	<p>A. Medium-Low B. Medium C. Medium to Low D. Low</p> <p>Small sample size Teacher was not</p>

<p>Mathematics Achievement (US)</p>	<p>monitoring sheet for homework assignment</p>			<ul style="list-style-type: none"> • Experimental Sd completed more homework. • Positive effects for low performing Ss who performed better than control on 5/7 tests and on overall grade. 		<p>blind to allocation</p> <ul style="list-style-type: none"> • Standardised tests scores from previous years were used to establish baseline equivalence, but no comparisons of pre-and post-tests results conducted. • Assessments were not standardised/norm referenced. • Not clear if homework monitoring involves parents helping with homework.
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<p>Smith (2000)</p> <p>Home literacy experiences: The effects of collaborative familial interactions on student writing and reading acuity and performance</p> <p>EdD thesis</p> <p>(US)</p>	<p>Home-school collaboration</p> <p>This is a home literacy programme involving the use of literacy bags at home</p>	<p>Primary</p> <p>(age 7, 2nd grade)</p>	<ul style="list-style-type: none"> • Reading • Writing 	<p>No effects</p> <p>Comparisons of groups showed no intervention effects on writing and reading.</p> <p>Removing outliers from the control group showed that experimental group made bigger improvements difference between pre- and post-tests.</p>	<p>RCT with pre-post-test comparisons</p>	<p>A. Low</p> <p>B. Medium</p> <p>C. Low-Medium</p> <p>D. Low</p> <ul style="list-style-type: none"> • No baseline equivalence established • Attrition was 25% • One control class taught by a teacher using formulaic-writing method out performed experimental group.
<p>Sparkes-Butt (1995)</p> <p>Enhancing Reading Achievement of Grade Two</p>	<p>Parental training</p> <p>Parent-child reading intervention, with parental</p>	<p>Primary, grade 1</p> <p>Sample selected by teachers, three matched pairs of girls, four</p>	<ul style="list-style-type: none"> • Gates-MacGinitie Reading Test • Peabody Picture Vocabulary Test • Slosson Oral Reading Test 	<p>Positive effects</p> <ul style="list-style-type: none"> • GM test scores: steady gains made by both control and experimental 	<ul style="list-style-type: none"> • RCT with pre-post tests 	<p>A. Low</p> <p>B. Medium</p> <p>C. Low</p> <p>D. Low</p> <ul style="list-style-type: none"> • Small sample size

<p>Students: A programme for parents</p> <p>M Ed thesis</p> <p>(Canada)</p>	<p>education in the scheme</p>	<p>matched pairs of boys, so compared seven children with another seven in control group.</p> <p>Low-income families</p>	<ul style="list-style-type: none"> • Inventory of Reading Attitude • Parent's Questionnaire 	<p>groups; greatest gains made by experimental group.</p> <ul style="list-style-type: none"> • PPVT: gains made by both groups; greatest gains made by experimental group (over twice as many gains from pretest to mid-test, and from mid-test to post-test). • Sight vocabulary: gains made by both groups; considerably greater gains made by 	<p>(14 pupils) makes any conclusions dangerous</p> <ul style="list-style-type: none"> • Teacher selection of participants likely to render bias in 'sample', but allocation to condition was randomised.
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				<p>experimental group.</p> <ul style="list-style-type: none"> • Very little difference in groups identified except in Reading Attitude and greater confidence reported in parental surveys 		
<p>Spoth <i>et al.</i> (2008)</p> <p>Increasing school success through partnership-based family competency training: Experimental study of long-term outcomes</p>	<p>Parental training</p> <p>Iowa Strengthening Families Program (ISFP) is a parental competency training programme</p>	<p>Secondary</p> <p>(age 11/12, 6th grade)</p>	<ul style="list-style-type: none"> • Self-reported grades • Self-reported school engagement • Substance abuse • Students' perceptions of ability and behaviour 	<p>Inconclusive results</p> <p>Study reported interaction effects of parental competency, reduced substance abuse on academic</p>	<p>Longitudinal, randomised block design</p>	<p>A. Low</p> <p>B. Low</p> <p>C. Medium to High</p> <p>D. Low</p> <ul style="list-style-type: none"> • All the outcome measures were based on self-reports • Sample not

(US)				performance. Comparisons of ES of gain scores in self-reported grades showed little difference between groups.		representative – majority White, two-parent families with relatively low proportion eligible for free/reduced lunch.
St Clair and Jackson (2006) Effect of Family Involvement Training on the Language Skills of Young Elementary Children from Migrant Families (US)	Parental training Migrant Education Even Start Family Literacy Program (MEES) trains parents for support their children in their school curriculum	Primary	Literacy skills	Positive effects <ul style="list-style-type: none"> • No difference in gain scores at the end of 1st year • Significant difference in gain scores for all measures (except picture vocab) at the end of 1st grade • ES for Broad Score 	Quasi-experimental study with pre and post-test comparisons	A. Low B. Medium C. Medium D. Low <ul style="list-style-type: none"> • Participation was voluntary • Children were matched on ELL • Very small sample size ($n = 42$) • Number from each school not given. This could

				comparison ($d = 1.2266$)		bias results as one is a parochial school and the other a public school.
<p>St Pierre et al. (2005)</p> <p>Effects of a family literacy program on low-literate children and their parents: findings from an evaluation of the Even Start Family literacy program. (US)</p>	<p>Parental training</p> <p>Even Start Family Literacy Program</p> <p>Program provides parenting education, joint-child literacy activities to children and parents from low-literate families.</p>	<p>Pre-school to primary</p> <p>The programme follows children from birth to age 7.</p>	<p>Literacy</p>	<p>No effects</p> <ul style="list-style-type: none"> • No statistically significant impact on child literacy, parent literacy or parent-child interactions, when compared with control families. 	<p>RCT with comparison groups but no pre and post-test comparisons</p>	<p>A. Low</p> <p>B. Low</p> <p>C. Medium</p> <p>D. Low</p> <ul style="list-style-type: none"> • Low level participation of families • Ineffective instructional services because of the curriculum content and instructional approach • No proper monitoring of implementation

						and control of other variables
<p>Starkey and Klein (2000)</p> <p>Fostering Parental Support for Children's Mathematical Development. Early Education and Development</p> <p>(US)</p>	<p>Parental training Programme to help families develop maths skills in Head Start children</p>	<p>Pre-school (pre-kindergarten children)</p>	<p>Maths skills</p>	<p>Mixed effects</p> <ul style="list-style-type: none"> • Positive gains in informal math knowledge • No improvement in literacy 	<p>Described as an experimental study but it's not clear if families were randomly assigned to control and experimental groups.</p> <p>Differences were observed in pre-test scores suggesting lack of randomisation or small sample ($n = 30$)</p> <p>Pre-post test comparisons of</p>	<p>A. Medium to Low B. Low to Medium C. Medium to Low D. Low</p> <ul style="list-style-type: none"> • Main issue is the small sample, lack of randomisation as evidenced in the observed differences in pre-tests. • No baseline equivalence established, attrition and non-participation not taken into account. • Does not present

					maths and literacy tests	statistical effect sizes and basic allocation procedures of families.
<p>Steiner (2008)</p> <p>Effects of a school-based parent and teacher intervention to promote first-grade students' literacy achievement.</p> <p>Ed D dissertation (US)</p>	<p>School-based home intervention (related to Project EASE by Jordan <i>et al.</i>, 2000)</p> <p>Home literacy programme to encourage parents and teachers to work cooperatively to integrate literacy practices at home and in</p>	<p>Primary (age 6)</p>	<p>Literacy skills</p>	<p>No effect on all measures of literacy apart Concepts about Print.</p> <ul style="list-style-type: none"> • No differences in post-test DRA and DIBELS scores between the two treatment groups. • Compared to the control group, there were also no significant differences in DRA and DIBELS 	<p>Quasi-experimental design with pre and post-test comparison.</p>	<p>A. Low B. Low C. Low D. Low</p> <ul style="list-style-type: none"> • Small sample size ($n = 25$) with 19 control group and 6 experimental. • Sample not randomised to control or intervention • Not clear how many children were in each

	school.			scores between those in the two treatment groups and those in the control group.		intervention groups. Possible that there could be only one child in one of the groups. Little is known about the characteristics of the children and their family background. <ul style="list-style-type: none"> • Only one school and one teacher in each condition, so results not generalisable.
Stevens (1996) Parental influences in getting children "ready to learn" PhD dissertation	Paired reading Effects of parent-child reading on language development of children	Pre- school (age 4)	Literacy <ul style="list-style-type: none"> • Children's academic and communication abilities measured using the WPS 	Not conclusive effects <ul style="list-style-type: none"> • No significant differences between groups on 	Quasi-experiment with pre- and post-test design	A. Low B. Low C. Medium to Low D. Low <ul style="list-style-type: none"> • Study based on

(US)			Developmental Profile II test <ul style="list-style-type: none"> • Children's language 	communication and academic skills <ul style="list-style-type: none"> • Experimental group showed significant increase in communication and on Expressive and Receptive tests. No analysis carried out for control group. • Both groups showed improvements. 		one school, so not generalizable <ul style="list-style-type: none"> • Only 18 of the 84 took part • No pre-post test comparisons for language ability for control group • Because both groups made improvements, possible that result could be due to maturation, teacher effects etc.
Topping, et al. (2004) Tutoring in mathematics: a generic method	Parent tutoring in home learning <i>Duolog Maths</i> (Home-school partnership)	Primary Year 6	<ul style="list-style-type: none"> • Maths skills • Students' attitude towards maths • Experimental parents' attitude towards maths and 	Positive effect Although experimental group made greater progress	RCT with pre- and post-test design	A. Low B. Medium (small sample) C. Medium D. Low

(UK)			the program	than control group, ES of the gains in mean scores between the 2 groups is small ($d = 0.0955$)	<ul style="list-style-type: none"> • Sample size is small • Homework was not independently monitored. So it is not clear whether control students had help at home or not, and whether experimental parents adhered to the suggested strategies. • Confounding variables such as additional time spent on homework by experimental students, and extra attention were not taken
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						into account.
<p>Tsikalas and Newkirk (2008)</p> <p>Family computing and the academic engagement and achievement of low-income, urban adolescents: findings from the computers for Youth Intervention</p> <p>(US)</p>	<p>Home learning Computers for Youth program (CFY is a national non-profit organisation)</p>	<p>Secondary (6th and 7th grade)</p>	<ul style="list-style-type: none"> • Academic engagement • Family use of computers • Standardised math test scores 	<p>Cannot be determined</p> <p>No comparisons were made with previous year's math scores, so it was not possible to establish if the intervention had any positive effect on maths performance.</p>	<p>Has no design. No comparison group only two measures with “ [SOMETHING missing??]</p>	<p>A. Low B. Low C. Medium D. Low</p> <p>This is a report of the first year of a three-year study, so results have yet to be seen.</p> <ul style="list-style-type: none"> • No comparison of pre- and post-test maths scores • Only a small proportion of the variance in maths scores was explained by school computer use • There was no

						monitoring on how computers were actually used at home. There is a question of the reliability of self-report responses.
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<p>Van Voorhis (2001) Teachers' use of interactive homework and its effects on family involvement and science achievement of middle grade students. (US)</p>	<p>Home-school collaboration (TIPS) Use of interactive science homework to involve parents in children's homework (TIPS)</p>	<p>Secondary (6th and 8th grade)</p>	<ul style="list-style-type: none"> • Homework completion/submission and marks obtained • Science exam grades • Homework engagement (time spent on homework and attitude/opinion about science and school (survey)) 	<p>Positive effect Analysis carried out was not able to determine effects of TIPS on maths achievement</p> <ul style="list-style-type: none"> • Family involvement did not predict performance in science grades for both groups. • No significant differences in homework return rates and accuracy between TIPS and ATIPS. 	<p>Quasi-experimental study with comparison groups. No pre- and post-test comparisons.</p>	<p>A. Low B. Medium-Low C. Medium D. Low</p> <ul style="list-style-type: none"> • Quasi-experimental • No pre-test/post-test comparisons for the two groups to indicate the effect of the intervention on science achievement. • Both honors-ability classes in the 6th grade were assigned to TIPS and both average-ability classes to ATIPS. 8th grade classes did not
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						<p>include low-ability students.</p> <ul style="list-style-type: none">• Positive relationship between TIPS and science report card grades• No standardised tests used• Teachers not blind to assignment
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<p>Van Voorhis (2011a) Adding families to the homework equation: a longitudinal study of mathematics achievement (US)</p>	<p>Home-school collaboration (TIPS) TIPS (Teachers Involve Parents in Schoolwork)</p>	<p>Primary Grades 3 and 4 (mean age = 9.7 years)</p>	<ul style="list-style-type: none"> • Time spent on homework • Family involvement in homework • Student attitudes and feelings • Maths achievement measured using criterion-referenced standardised maths test scores on the Tennessee Comprehensive Assessment Program (TCAP) 	<p>Positive effects p. 331 'TIPS students earned significantly higher standardized test scores than did control students. The relationship was most robust for students who used TIPS for two consecutive years and less significant for those who used TIPS for 1 year'</p>	<p>Quasi-experimental longitudinal design with random assignment of teachers Lack of Information: 'one randomly assigned TIPS and the other to control condition in a matched control classroom.'</p>	<p>A. Low B. Medium to Low C. High D. Low No random allocation of students</p> <ul style="list-style-type: none"> • Intervention and Control students were significantly different in terms of background and prior achievement. • Did not use the appropriate analysis, e.g. comparison of means to establish ES. • Possibility of confounding variables.
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<p>Van Voorhis (2011b)</p> <p>Costs and benefits of family involvement in homework. Presents the results of three 2-year longitudinal intervention to TIP.</p> <p>(US)</p>	<p>School-based home intervention (TIPS)</p> <p>TIPS – a homework programme to involve parents in schoolwork for maths, language arts, and middle school science classes.</p>	<p>Across age groups (primary, middle and secondary)</p>	<ul style="list-style-type: none"> • Time spent on homework • Family involvement in homework • Student attitudes and feelings • Homework completion • Report card grades • Standardised test scores in TIPS subjects, including criterion-referenced items 	<p>Positive effect with additional year</p> <p>But no effect on report card grades</p> <p>TIPS appear to be more effective with an additional year. (ES between experimental and control group in year 1 = 0.06; year 2 = 0.49)</p>	<p>Quasi-experimental study with random assignment of teachers but not pupils.</p>	<p>A. Medium to Low B. Medium to Low C. Medium D. Low</p> <p>Large sample total of 575 pupils but only 16% elementary maths students; 49% middle school language arts and 35% middle school science students</p> <ul style="list-style-type: none"> • Main problems could be the rates of participation. • No random allocation of students • Not clear whether control
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						<p>and experiment students were comparable in background</p> <ul style="list-style-type: none">• No monitoring of implementation at home, e.g. did control students involve parents at home as well?
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<p>Villiger, et al. (2012) Does family make a difference? Mid-term effects of a school/home-based intervention program to enhance reading motivation (Switzerland)</p>	<p>Home-school collaboration LiFuS Program – a school/home-based program to enhance reading motivation and comprehension of primary school children</p>	<p>Primary (4th grade, average age = 9.97 years)</p>	<ul style="list-style-type: none"> • Reading motivation • Reading comprehension Reading grade 	<p>No effect (in some cases negative effect)</p>		<p>A. Medium B. Medium C. High D. Medium</p> <p>Use of inappropriate analysis as groups were not randomised.</p>
<p>Warren (2009) The effects of training parents in teaching phonemic awareness on the phonemic awareness and early reading of struggling readers</p>	<p>Parental training The compares the effects of training parents in phonemic awareness and read-aloud techniques on</p>	<p>Primary (age 5–6)</p>	<ul style="list-style-type: none"> • Literacy skills, using the standardised DIBELS test, criterion-referenced tests (e.g. Test of Phonetic Cue Reading and the Test of Phoneme Identities) 	<p>No effects</p> <ul style="list-style-type: none"> • Phonemic awareness training of parents did not have significant effects on the children’s reading skills. 	<p>Quasi-experimental study with a pre and post-test with random assignment of children to experimental and control conditions</p>	<ul style="list-style-type: none"> • Low • Low • Medium • Low • Very small sample size (10 parents), and only 5 in each group.

PhD dissertation (US)	children's literacy skills.		<ul style="list-style-type: none"> • Teacher ratings of achievement 	<ul style="list-style-type: none"> • No difference between groups on pre-and post-test comparisons for two measures (Phoneme Segmentation Fluency and Nonsense Word Fluency). • Test scores of experimental (phoneme training) and comparison group (parent reading aloud) showed no significant difference between groups. 		<ul style="list-style-type: none"> • Only a third of parents identified took part. Those who participated may be inherently different to those who were not able to participate. • Children continued to be taught phonemes in their regular classes • There was also no control for differences in teachers and types of schools
Wehrell-Chester (1994)	Training parents to teach children	Primary	<ul style="list-style-type: none"> • Physical science achievement 	Positive effects on science	Quasi-experimental	<p>A. Medium-Low</p> <p>B. Medium</p>

<p>Effects of a family physical science program on student and parent achievement and attitudes</p> <p>(US)</p>	<p>at home</p> <p>The programme aimed to teach parents how they can work with their children at home using a prescribed Physical Science manual</p> <p>Two treatment groups</p>	<p>(age 9 and 10; 4th and 5th grade</p>	<p>(researcher-developed multiple choice tests)</p> <ul style="list-style-type: none"> • Parent attitude about science • Levels of parental involvement • Pupils' attitude towards science. 	<p>achievement but not parental involvement</p> <ul style="list-style-type: none"> • Intervention was effective in improving the physical science achievement of both groups of treatment students (parent-only and parent-child). • Both treatment groups scored significantly higher than control students in the post-test and made significant progress (d = 	<p>study using non-equivalent control-group pre- and post-test design</p>	<p>C. High</p> <p>D. Low</p> <ul style="list-style-type: none"> • Participants were volunteers, not randomly selected. • Very small sample size. • Assignment to treatment groups was randomised • Tests were not standardised tests
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				4.01 for parent only; d = 3.0 for parent-child and d = 0.5 for control).		
<p>Williams (1998)</p> <p>An investigation of the influences of home-school collaboration on children's achievement</p> <p>(US)</p>	Home-school collaboration, and classroom support and discipline strategies	Across-age group (age 10–11)	<ul style="list-style-type: none"> • Academic achievement (measured using the norm-referenced Iowa Tests of Basic Skills (ITBS), which test reading, maths and spelling. • Academic self-concept (self-evaluation) • School engagement (self-evaluation) • Self-image (self-evaluation) • Parents' attitude 	<ul style="list-style-type: none"> • All students improved between pre- and post-tests for maths and reading with experimental students making bigger gains in reading but not maths. Although gains in reading was reported significant, the effect size was small (for reading ES = 0.093; maths ES = - 	Quasi-experimental design with pre- and post-test design with comparison group	<p>A. Low –Medium</p> <p>B. Low</p> <p>C. Low</p> <p>D. Low</p> <ul style="list-style-type: none"> • No matching of comparison and experimental students, so cannot rule out confounding variables, although pre-test means were compared which shows that the two groups were quite similar.

			<p>towards school</p> <ul style="list-style-type: none"> • Teachers' report of own attitude, self-efficacy and level of parental involvement 	<p>0.11)</p> <ul style="list-style-type: none"> • Gains in maths was smaller for experimental group compared to control group for both grades 5 and 6. • 		<ul style="list-style-type: none"> • Also the two experimental schools were involved in the Chicago Centre for School Improvement program which may have other features, which could have had an impact on some of the outcome measures. • Details of the CCSI program were not discussed.
<p>Williams (2008)</p> <p>Parental</p>	<p>Parental training in the use of classroom-</p>	<p>Primary (age 5–9)</p>	<ul style="list-style-type: none"> • Reading performance • Parental 	<p>No obvious effects</p> <ul style="list-style-type: none"> • Both control and 	<p>RCT with pre- and post-test comparison</p>	<p>A. Medium-Low B. Medium C. Low-Medium</p>

<p>intervention: Effects on reading comprehension skills in Black children in kindergarten through fourth grade.</p> <p>(US)</p>	<p>related activities</p> <p>Involves training parents to use teaching activities at home similar to those used in the school.</p>		<p>engagement</p>	<p>experimental groups showed increase in reading scores pre- and post-test, but no significant difference in gain scores between groups.</p>		<p>D. Low</p> <ul style="list-style-type: none"> • Participants were volunteers • Sample was not large enough (35 in each arm) • No baseline equivalence <ul style="list-style-type: none"> - control group had higher pre-test scores for three of the four subsets than experimental group - control group parents were more highly educated • No monitoring of implementation at home
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						<ul style="list-style-type: none"> • Level of parental engagement based on parents' self-report • Results may not be generalisable as study is based on Black children only.
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Note: this table represents the summary of the reports based on the initial data extraction.

APPENDIX F – CHARACTERISTICS OF THE MOST PROMISING INTERVENTIONS

This section revisits the original review questions posed in Chapter One, looking at what else needs to be done, the possible barriers to successful implementation of interventions, and the characteristics of the most promising interventions. Not all of the questions are addressed in full, because so few effective and clear interventions were found. Given that so few good studies were found, everything presented here must be taken as tentative and indicative only.

F1 Summary of the best studies

The best studies (in terms of quality of evidence) in this review were rated medium. No high-quality studies were found. These include four medium-quality studies of the same programme and involving the same dataset (Reynolds *et al.* 2004; Ou 2005; Ou and Reynolds 20010; Reynolds *et al.* 2011). All showed positive outcomes for the intervention, starting at pre-school age and run within pre-school centres. This programme differs from the unsuccessful or even harmful ones in that it starts with slightly younger children. And it is more an intervention to bring parents into the classroom than to train them to assist their children at home and in isolation. The only other medium-quality study found to have positive effects was for 8th grade children to assist their transition to secondary school (Gonzales *et al.* 2012). This involved training concerned largely with parenting skills, but it had other components such as training also for the young people in coping and overcoming problems, and joint family sessions.

The review found only one medium or near medium-quality evaluation of a simple parental involvement intervention, and this reported the intervention to be slightly harmful (Herts 1990). The programme was for 3rd grade children, and involved training parents to help their children with reading. This could be because baseline equivalence was not established. So children could already be different to start with. Also teachers (rather than individual students) were randomly allocated to treatment and control groups. There could well be differences in instructional competence that was not accounted for, or classes could already be streamed with better able students in some classes than others.

Two other medium-quality evaluations with evidence of negative effects were also based on training parents to assist their children with behaviour management, literacy, numeracy and homework completion (Bradshaw *et al.* 2009; Villiger *et al.* 2012). One started with children

in 1st grade, and the other in 4th grade. Neither found the parental training intervention to be effective.

F2 What are the key generic elements of the most successful interventions in enhancing early and subsequent parental involvement in the education of children from disadvantaged backgrounds?

As there were so few good quality studies it was not possible to make any credible judgements about what works. This is made even more difficult given that the best studies with positive effects often involved multi-component strategies with parental involvement as one of them. It is therefore not possible to conclude that parental involvement was the key element. Compounding this were other medium-quality studies suggesting that parental intervention may actually not be effective. Given the limited evidence we have we can only make tentative conclusions.

If any form of parental interventions were to be introduced, the most promising phase is pre-school and preparation for primary school. The most effective programme with long-term results for young children, based on the best evidence available, is a multiple strategy approach incorporating parental involvement with a range of other interventions. This programme is based on providing institutional support for parents and bringing them into the care centres and early classrooms. It is not a home-based intervention. In fact, overall, the impression from the review is that interventions are most likely to succeed when they are aimed at young children, and involve parental training, ongoing support, and cooperative working with teachers. However, based on the available evidence, we have to conclude that there is no clear indication that parental interventions for pre-school children are effective.

There is also no evidence here that primary age interventions to enhance parental involvement are generally effective in increasing children's attainment. In fact, the better studies suggest the interventions can be harmful. These medium-quality negative studies are largely about training parents to act a little like teachers at home. Perhaps this is not an effective strategy. The medium-quality positive study, on the other hand, involves parents and other adults meeting and working together in an institution of some sort, suggesting that effective parental intervention may be one that involves some school collaboration. As there is only one such study, we cannot make any claims about its effectiveness. It is also notable that when parental involvement has been compared to a classroom intervention with the same purpose, it is the classroom programme that is more successful.

Given the evidence we have, it is also not possible to conclude that the kinds of parental involvement interventions covered in this review will be effective in secondary phases.

Just as it is important to find the key elements of successful interventions, it is also equally important to identify the ineffective or harmful ones so that further research in these areas does not continue. Some specific kinds of intervention, such as parents working on computers with their children have so little evidence of promise that they can be abandoned safely (if the concern is chiefly with academic outcomes). There is also no evidence that simple parental participation in school events, like parents–teachers’ evening, or parents–teachers associations, cake sales and other fund-raising events will influence attainment for disadvantaged children. Also ineffective are programmes that merely encourage parents to work with their children at home (i.e. without direct support or skills training), or seek to improve parent–child relationships. If neither the parent nor the child knows how to improve a skill like reading comprehension then mere aspiration or motivation is not going to help.

Effective parental engagement is not just about getting parents to be interested in their children’s education or helping them with their schoolwork because many already do. Three-quarters of parents from all socio-economic backgrounds are already routinely helping with their children’s schoolwork, and such involvement did not significantly affect children’s performance in language and literacy (Hartas 2012). Low-income families were just as likely as those from higher income homes to be involved in their children’s learning (IowaParents.org 2006). And such involvement does not significantly affect children’s performance in language and literacy. So raising aspirations and increasing parental involvement *per se* are not the answers.

In general, the most promising studies (highest-quality studies with positive outcomes) tended to be those that are multi-pronged with parental involvement as one of the components. Some of these programmes included other interventions like health and economic support for parents, extra classes, enrichment activities and behavioural training classes for children. Where these elements have been separated it is these other aspects that are effective not the parental involvement. This means that the promise of improving attainment by enhancing parental involvement is less than appeared to be the case when this new review was commissioned.

However, it is important to put the finding of this review into context. Our previous work has shown that the situation for many other possible interventions involving individual

behaviours, self-concept, motivation, attitudes and aspirations are even worse. In comparison, parental involvement remains the most promising approach.

F3 What are the main barriers to the successful implementation of these interventions?

In many instances, the lack of efficacy of some interventions may have had more to do with recruitment and retention of participants than the intervention itself. Studies were small in scale and/or had high dropout once underway. An intervention to involve parents more, by definition, can only work if the parents wish to be involved. In fact, this could be the reason for the association between parental engagement and child attainment (Gorard *et al.* 2011). It may just be that parents willing to get involved also differ in other characteristics that themselves affect attainment. Or it could be that parental involvement is key but that the interventions will never include the unwilling. Or it may be that parental involvement is key and that interventions have been devised which can increase the proportion of parents involved (rather than merely alter the behaviour of the already involved). This is part of what this new review set out to discover.

From the studies evaluated we identified some of the common issues faced by trials of this nature to understand why many of the potentially good studies could only include volunteer participants and why there was a high dropout rate among some groups of parents. In addition to these studies we also refer to the excluded studies which were largely reviews and descriptive in nature to look for barriers that impact on the successful implementation of parental interventions.

The most important element of a successful parental involvement intervention is parental involvement itself, that is, getting parents to take part in the programme. One major weakness that consistently appears in several potentially good interventions is the low response rate from parents and high drop out. This means that parents who were invited did not respond, or did not complete the task required (e.g. returning a monitoring sheet), or did not volunteer. Ironically, those parents whom the interventions are aimed at are also those who were less likely to respond to invitations to participate or to volunteer. From the descriptive studies and the randomised controlled trials that evaluated we identified some potential barriers to parental interventions. These include:

- *Parents' negative attitude towards school*

Parents feel alienated and unwelcome at school (Ndaayezwi 2003). This is particularly so with less educated parents or parents from migrant or minority and lower social economic backgrounds who often perceived teachers as representing the middle class and whose values and culture conflict with their own. They, rightly or wrongly, believe that schools do not understand them because of cultural and language differences. These parents may feel embarrassed about approaching schools or to be involved in any school activity. Such barriers may be artificially constructed by parents either due to ignorance, misunderstanding or their own negative experience at school. Anecdotal evidence from parents in one study suggests that their negative experience with school made them suspicious and less open to cooperation with schools (Garlington 1991).

- *Failure of schools to communicate with parents*

The misunderstanding and apprehension by parents to be involved in school-initiated interventions may be due to the failure or lack of communication between school and parents. Ndaayezwi (2003) found that ineffective communication was a common barrier to successful and collaborative implementation of an intervention. This was particularly so with ethnic minority parents where written communications can be confusing. According to Rosenthal and Sawyers (1996) this is sometimes due to poor communication skills on the part of the teachers.

Some studies have also found that recruitment strategies via letters written in English only or as emails often do not reach the very parents for which the intervention is targeted at. For such parents, innovative ways will be need to be found.

- *Parents personal or family issues*

No matter how well-meaning participation in school or research initiated interventions may be, some parents will still not want to be involved in these interventions for personal reasons, such as ill-health, family commitments, work commitments and other family problems (Roberts 2008). These are often the parents of children who are not doing well at school, and are precisely the kind of parents that the intervention is meant for. In the study by Starkey and Klein (2000) they found that such barriers were most often related to childcare, transportation and scheduling conflicts.

- *Researcher initiated intervention*

In many of the trials, the intervention was implemented by a programme developer, a programme deliverer or a researcher who was not linked to the school. Schools are enlisted to assist with carrying out the trial. In these instances, schools do not have control over dropouts or are not overly concerned about dropout. Schools recruited to take part in the trial often do not understand the nature of randomised controlled trials and the necessity to minimise attrition. It is not uncommon to see parents who have not attended training sessions or children who are often absent drop out of the trial. This can jeopardise the integrity of the trial and render the project invalid. This appears to be the case in many of the studies that we have evaluated in this review.

- *Lack of support from schools*

Another issue related with small-scale piece-meal research is getting the cooperation of schools (Spoth *et al.* 2008). Where the intervention is not initiated by the school, but by external researchers, schools sometimes find it hard to fit in the time required for the intervention. In addition to their regular teaching commitment, teachers have to find time, for example, to conduct training for parents, hold discussions with parents, prepare additional resources for the intervention and track and monitor parents' involvement. Teachers have to find their own time to do it. For example, although home visits may seem promising, they can be time consuming and labour-intensive (Ndaayezwi, 2003). This requires commitment on the part of the teachers, and would be difficult to carry out if the numbers involved are too large. There is also the conflict with teachers' teaching schedule. In order to implement the intervention teachers sometimes have to rearrange their classes or their work schemes.

- *Fidelity to treatment*

A related factor, which may influence the successful implementation of a programme, is the inconsistency in implementation between researchers and teachers, and among teachers within the school and across schools. The success of any programme depends on the fidelity to treatment, that is, the programme is implemented as intended. If teachers and participants do not adhere to the programme protocol, the integrity of the intervention can be compromised. Teachers may differ in terms of their level of experience, expertise and commitment. They may also differ in the level of support they get from their school in relation to having time out or reduced curriculum time to focus on the parental involvement (PI) programme. Consequently, the outcomes may differ, so we do not get consistent results.

What are the main barriers to implementation?

The barriers to successful implementation of a PI programme can be divided into two types. The first relates to the problem of recruitment and retention. One of the main barriers to successful implementation of PI interventions is recruiting and retaining the relevant parents in the trial. There are several reasons for this, such as:

- Parents' negative attitude towards school
- Failure of schools to communicate with parents
- Parents personal or family issues.

The second type of barrier relates to the implementation of the programme. Examples of such barriers include:

- Researcher initiated intervention
This is when schools are recruited to implement a programme developed and sometimes delivered by researchers or external agencies, but have no ownership of the programme.
- Lack of support from schools
This can happen when schools are involved in the programme as part of a wider initiative, but do not have ownership of the intervention. They are thus less supportive of the programme. Teachers involved will have to find their own time to fit in the PI programme thus leading to half-hearted commitment to the programme.
- Threat to fidelity to treatment
Teachers in different schools with different levels of support and experience may implement the intervention in different degree of success.

F4 How may such barriers be overcome?

In this section the ideas suggested for overcoming barriers largely came from strategies used by the researchers of the trials we reviewed. However, in the course of the review, we also came across studies that reported both barriers to parental engagement in relevant evaluation and strategies to try and overcome these barriers. These studies are largely descriptive and their approaches are not based on trials, but the recommendations they suggest could make the kind of rigorous evaluations proposed in this review more viable. We add these insights to those from the studies that we reviewed.

One of the main barriers to successful implementation of PI interventions is recruitment and retention of parents in the programme. This is largely due to parents' resistance, reluctance or inability to participate and commit to the interventions. Negative attitudes towards school and teachers, poor communication between school and home and personal issues faced by

parents are often cited in intervention studies as barriers to participation. Overcoming some of these behaviours is one way of encouraging participation and minimising attrition.

Overcoming negative attitude towards school

Horny and Lafaele (2011) suggested a model to address barriers to PI that takes into account parental beliefs about PI, their current life contexts and their backgrounds. Good teacher–parent relationships can be a key to successful implementation because if parents trust the teachers and believe in the school efforts to improve their child’s attainment, they are more likely and willing to cooperate. Therefore it is important to build this relationship before the commencement of any PI programme.

A recent JRF report identified some good practices adopted by schools to overcome parents’ negative attitude towards school (Menzies 2013). These included invitations to parents to attend lessons in school to overcome the negative experiences they may have about school, providing opportunities for parents to interact with the school, visiting homes of children before they transition to secondary school, organising ‘getting to know you meals’ and so on.

Overcoming communication barriers

To encourage participation in PI interventions it is important that schools communicate to parents the aims, purpose and outcomes of the intervention to parents. Open face-to-face communication where doubts and apprehension can be addressed is one of the most often used strategies in many of the studies we reviewed. Schools could use open evenings or parents’ evenings when parents come in to talk about their child’s progress to talk about the possibility of being involved in PI interventions. However, as discussed in the preceding section, many parents find it hard to attend meetings organised by the school. Where the intervention involved parental training, some parents find it hard to attend the required number of sessions. In our review, researchers used a range of strategies to accommodate parents to make these interactions possible. A number of researchers offered pragmatic solutions, such as scheduling training sessions in the evening and providing childcare and language translators (Roberts 2008). Allowing parents to bring children and siblings also encourage interest and attendance (Baker 2010; Roberts 2008). In some instances teachers were compensated for their time at training. Martinez and Velazquez (2000) in their evaluation of family involvement programmes to help diverse migrant families also suggested similar strategies to promote parental involvement. These include:

- Bilingual liaison personnel to bridge the divide

- Provision of child care, transportation, evening and weekend activities and refreshments for school activities
- Parent–teacher conferences to allow parents to voice their views about how they can contribute to their children’s education.

Starkey and Klein also suggested providing childcare during training sessions and arranging carpools. Where mothers could not personally attend, they suggested encouraging mothers to send a substitute to the training.

The Ohio Community Collaboration Model for School Improvement (Anderson-Butcher *et al.* 2004) suggested:

- Appointing family engagement coordinator whose responsibility is to facilitate family engagement
- Allow teachers time to spend contacting families
- Use user-friendly language in communication
- Communicate with families, clearly about expectations, in positive language and early.

Overcoming resistance from parents because of personal/family issues

One strategy that was particularly effective was home visits. This helps overcome the issue of communication and apprehension. Teachers visit homes so parents do not have to take time off work, arrange baby sitters or if they are of ill health it reduces the necessity of travelling. It helps solve the issue with transport. Visiting homes enables teachers to establish relationship with families and understand the child’s home environment. It signals to parents that the school cares about their child enough to make the personal visit. It is a useful way of finding out about parent’s fears, apprehension or if they have any reservations about participating in the PI programme. Any misunderstanding or misperception can be cleared up. In Ndaayszwi’s study (2003) such face-to-face recruitment was found to be effective as teachers personally visited the homes of otherwise uninvolved parents to talk about their children’s school work. In another study, Landry *et al.* (2011), visited homes and took video recordings of mothers’ interaction with their children and gave them feedback on their performance.

Our review found that the most successful interventions for older children are those that have an element of home–school collaborations, where schools put in concerted effort to involve parents in the intervention. TIPS (e.g. Epstein 1997; Ndaayezwi 2003; Van Voorhis (2001; 2011a and 20011b) and Family–School Partnership programme (Bradshaw *et al.* 2009) are examples of such programmes.

Support for schools

Where interventions are initiated by external agencies or researchers, schools may not have ownership of the programme. They may feel that they are just an instrument for a piece of research. They are thus less likely to give the support that is needed for the successful implementation of the programme. Researchers, therefore, need to first get the schools enthusiastic about the programme, and schools need to feel positive about it. Financial incentives for schools to buy out teachers' time, engage support staff are useful. Other incentives, such as, free training for teachers, resources or training packages for parents could be made available to schools.

Encourage government sponsored or large scale development and research

Apart from recruitment, attrition (that is, parents dropping out or not completing intervention) is a major threat to the validity of the programme. This is especially so if parents dropped out after randomisation. To minimise this, both schools and researchers need to understand the threat dropouts can impact on the quality and the confidence one can place on the results of the study. Schools and researchers should ensure full cooperation by parents and every effort should be taken to prevent dropouts.

Perhaps if PI programmes become part of a wider government sponsored initiative, and participation in the programme is a requirement of a child being in school (like school attendance), more funding could be available and a larger sample could be involved. Schools will get the necessary support. Schools can apply for extra funding for running such programmes. This immediately strengthens the quality of the study. If a large enough number of schools and teachers are involved, we also solve the issue with inconsistency in implementation across schools. With more funding, extra personnel can be hired to support schools in the implementation and in engaging parents, such as home visits. One such example in England is the Achievement for All programme implemented across a number of schools across the country. Schools on the programme are supported by an Achievement Coach who has regular and frequent discussions with teachers supporting them in engaging parents in structured conversations.

Other reasons

Other reasons for the mixed results include the varied and inconsistent definitions of types of parental involvement – from parental behaviours, parenting styles, and parents' aspirations to parenting activities such as helping with homework and attending school activities. Another reason for confusion is the lack of any clear measure of parental involvement. Many studies have used parent self-report and/or student and teacher reports. Parents from

disadvantaged families were more likely to claim that they were already very involved in their child's education, but only in helping out with school dinners and school trips. They were also more likely to claim that they already knew everything important about their child's education, despite the fact that children from such households tended to perform less well in school, on average. Other reasons for lack of agreement could include differences in the duration and focus of the intervention, and the age group or school phase of the children involved.

How may such barriers be overcome?

The two main barriers to successful implementation of PI programmes are recruitment and retention of participants on the programme, and the small-scale piece-meal research conducted by individual researchers. Examples of how such barriers may be overcome include:

- Establishing a trusting relationship between school and parents
- Offering practical solutions to resistance or reservations by parents to participate
- Visiting homes of targeted children to support families and have open face-to-face discussions
- Providing administrative and staff support to schools implementing the programme
- Encouraging more government sponsored and large scale initiatives to increase funding and support.

F5 What could schools and other key stakeholders do, in the short term, to improve the outcomes of currently disadvantaged children through practical cost-efficient applications for policy and practice?

The best studies suggest that the most effective PI interventions are those that target very young children when they were in pre-school, involving parents in their children's learning activities and include some element of parental skills training. Many of the studies that reported positive impact for primary and pre-school children included an element of parental training. However, most of these studies were rated low on evidence due mainly to their small samples or compromise in design. This does not suggest that such interventions have no value or have no real impact. It should be taken as an indication of promise in this area.

Funding to support more large scale and rigorously evaluated interventions involving parental training should be encouraged to confirm the effect of parental training. There were three medium-rated studies, which showed positive impact of parental training, that focused on developing children's reading and language skills.

Although there were also three medium-quality studies that reported no clear or even negative impact of parental training for young children this is because of compromise in design. Two involved random allocation of children to treatment and control conditions by classes within school rather than by pupils (Herts 1990 and Bradshaw *et al.* 2009). This may create diffusion where there is a spill over effect among parents. There may also be impact due to differences in teachers' effectiveness and experience. This was not controlled for. Although Bradshaw *et al.* (2009) mentioned parental training as one aspect of their intervention, it is not clear what this entails. It is possible that the training was not adequate as the paper described the other intervention (the Classroom Centred intervention) in much greater detail, while the parent involvement intervention was given only a cursory mention that it was about home-school learning and communication activities. In Villiger *et al.*'s (2012) study parental training was about teaching parenting styles. Parents were actually trained not to interfere with their children's reading, but only to be around to provide support. The fact that the study showed small negative impact may suggest that reading comprehension is a skill that needs to be taught. Therefore, if the intervention is to improve skill-based outcomes such as numeracy and literacy then training parents not to be involved in teaching their children may not work. If the intervention is to improve motivation and enjoyment then training parents not to interfere may be more successful. This suggests that in order to improve the academic performance of children from disadvantaged background, parents need to be trained to help their children. Positive and constructive interfering or supervision and monitoring may be more helpful. It is therefore essential to identify the types of parental training that have the potential of impact.

The kind of parental training that is found to have positive impact tended to be those that included training parents in skills to teach their children in school-related activities, that emphasised training parents in behavioural management skills and parent-teacher communication, and teaching parents how to build their children's self-esteem and cope with stress as well as to support their children's learning at home.

Given the very weak evidence we have because of the small number of good quality studies, our recommendation here can only be suggestive rather than prescriptive.

Parental training

This review found that parental involvement activities for pre-school to primary school-age are those where parents play an active part in interacting with their children educationally, but it is not enough to give them information, or indeed, tell them what to do and how to do it. It requires more than this. Parents from disadvantaged backgrounds may not have a model of good parenting themselves. Training parents and demonstrating to them, either through role play or video tapes, how to interact with their children have been found to work in a number of studies. Parents get to practice in these sessions how to talk to their children and how to read to them.

For example:

- training parents to read to their children, through Play and Learn strategies
- training parents in general reading strategies to use at home
- training parents in linguistic and cognitive stimulation
- training parents in parent–child interactions to promote dialogic reading and vocabulary development
- training parents the use of literacy and numeracy materials at home
- training parents about concepts and strategies about maths
- teaching parents to use school-related activities and resources at home
- training parents to use similar teaching strategies as those used in school.

Bring parents into the classroom

The best evidence from the review suggests that the most effective PI intervention that has lasting effects is one that is school-based and involves children when they were in the early years. The Chicago School Child–Parent Centre programme, for example, aims to create a stable learning environment in the school and get parents to be actively involved in the children’s activities within the school. (Reynolds *et al.* 2011; Reynolds *et al.* 2004; Ou 2005). Thus what schools could do in the short term is to proactively include and involve parents in their children’s learning. Schools could model the CCPC and create a school-based learning environment that includes parents – bringing parents into the classroom. Bringing parents into classroom may be an alien culture in some schools in UK. Parents are often kept outside the school gate and have to make an appointment if they want to see the teachers. Schools tend to take the attitude of saying, ‘Leave the teaching to the professional.’ Perhaps there needs to be a rethink about such practice. Schools could involve parents more in

children's learning within the school. In this way parents understand what the school is doing and how they could help to support their children.

Home–school collaboration

An important consideration of Ofsted since 2009 was to get schools to effectively engage with parents – to improve the quality of communication between home and school and develop mechanisms to help parents support their children's learning. According to Ofsted (2009) one of the secrets of successful secondary schools was home–school communication.

Studies reporting positive impact for older primary school and secondary-school-age children tended to have some element of home–school collaboration. This may be because intimate one-to-one interactions, even if they are effective with pre-school children, are not likely to be successful because of reluctance of teenagers to want to communicate with their parents. With older children, the role of the school is therefore key to effective parental involvement. Schools have to put in an active and concerted effort to initiate parental engagement either through homework monitoring logs, or to strategically design homework activities that require students to communicate with their parents. They are part of what the children are doing anyway in the class. They should not be just an additional 'bolt-on' to mainstream activities (Goodall and Vorhaus 2011). This review found that successful interventions are those that are integrated into the school activities.

Examples of successful home–school collaboration programmes are:

- The Family–School Partnership programme which train teachers to train parents in behavioural management skills and numeracy and literacy skills (Bradshaw *et al.* 2009)
- Home literacy programmes which involve parents in learning activities in school
- Home literacy programmes where teachers and parents work together to integrate literacy practices at home and in the school
- TIPS (Teachers Involving Parents in School) where students work with parents at home on school-related activities
- Parent Education Teaching System (PETS) to enhance home-school communication to promote trust and respect between teachers and parents
- Homework monitoring system where parents are given guidance on how to monitor their children's homework activity.

Family support

Related to parental training is family support. The best evidence we have from one medium-quality study (Gonzales *et al.* 2012) is a family-focused preventive intervention to facilitate transition to secondary school includes an element of family support where a liaison officer was appointed to support families when needed. To get parents to be engaged in their children's education, parents need the extra support to overcome some of the initial barriers, for example, those concerning confidence, competence and apprehension as well as logistic barriers such as time and resources. Parents need to have the time and space at home to support their children. There are a number of programmes offering such support, for example, the Family Development Credential (FDC), the HIPPY programme (Home Instruction for Parents of Pre-school Youngsters), a home visiting programme, the Child-Parent Center Education Program (CPC), Even Start Family Literacy Program and the FAST (Family and Schools Together) programme. On their own, such programmes produce mixed effects, but when combined with effective parental education programmes they may be more effective.

Other implications for policy and practice

Part of the problem at school for some children from disadvantaged backgrounds may be that it is a strange environment, unlike their home – or more so than for many other children. This may then influence their judgements of relevance. Parental engagement and public involvement is therefore not simply another learning partnership; it is an attempt to bring the environments of school and home closer together (from both sides).

In October 2003, the DfES commissioned a report to assess the level of involvement of parents for children age 5 to 16 (Moons and Ivins 2004). It was found that parents from lower SES were more likely to claim that they were already very involved in their child's education, but only in helping out with school dinners and school trips. They were also more likely to claim that they already knew everything they needed to know about their child's education despite the fact that children from such households tended to perform less well in school. The report also found that parents for whom English was not their first language (e.g. in particular Pakistan and Bangladeshi parents) were less likely to report feeling confident in helping with their children's homework. The reasons for this were language difficulties, inability to understand children's homework and some also reported having difficulties with literacy and numeracy skills. Despite this, only 21% of such parents have attended courses to help them with these skills.

Evidence from our review suggests that there is promise in parental training. Policymakers should therefore establish mechanisms that encourage the development of programmes to train parents in a variety of skills, such as reading to children, behavioural management, working with children at home.

- Parental training vouchers for example, could be used to provide courses for parents to improve their English language skills, skills in numeracy and literacy so that they can help with their children's homework (Broksky *et al.* 1994; Fagan and Iglesias 1999; Jordan *et al.* 2000; Topping *et al.* 2004)
- Such vouchers could also be used to support parental training classes on shared reading and Play and Learn Strategies. These could also be implemented nationwide using the pupil premium. There is some evidence that such reading practices have positive impact on children's language development (Whitehurst *et al.* 1994; Boggess 2008; Baker 2010; Stevens 1996; Lonigan and Whitehurst 1998; Herts 1990; Reutzell *et al.* 2006; Fiala and Sheridan 2003; Landry *et al.* 2011; Rasinski and Stevenson 2005; Warren 2009).
- Parental training for parents could be in behavioural management, conflict; management and interactions with teenagers (Mullis *et al.* 2002–2004; Bekman 2004; Rhimes 1991; Landry *et al.* 2011; McDonald *et al.* 2006; Campbell and Ramey 1994). To ensure success, such training should target the right parents, and should be conducted effectively with lots of opportunities for parents to practise the skills, either with demonstrations or video recordings. It should not be another information-dissemination exercise.

In May 2012, in a pilot scheme, David Cameron (UK Prime Minister) offered parents of children under five parental training vouchers which they could use for classes on behavioural management, familial relationship resolution, and training parents in reading to their children. These classes are run by independent organisations. However, it is not clear if this was an evidence-informed policy, or if the scheme was evaluated and if the training classes were monitored. For the scheme to be successful, it is essential that strategies used in such classes have been trialled, independently evaluated and have shown to have promise of impact. It is also always the case that parents who take up such scheme may be the more educated and middle class families. If this was the case, then such a scheme is not likely to work, as it is not targeting the right parents.

The results of the present review also suggest slight evidence of positive impact of home-school collaborations. For example the Family School Partnership programme that trains

teachers to train parents in behavioural management skills and literacy and numeracy skills (Bradshaw *et al.* 2009).

- Schools could initiate workshops for parents on behavioural management, conflict management, on how to interact with teenagers. Schools can always hire outside experts to conduct such classes. Sending literature/instructional materials home is not always effective. If conveyed by the students, they rarely reach the hands of the parents. Even if sent by post, parents may not necessarily read them, especially those whose first language is not English or who are themselves not proficient in reading. Such information is best communicated face-to-face or by phone.
- Schools could involve parents when planning class activities so that parents understood the purpose of the activities (Kyriakides 2005).
- Homework activities which require parents working with their children on homework, e.g. TIPS (Teacher Involve Parents in Schoolwork) programme (Van Voorhis 2011a; Epstein *et al.* 1997) and use of homework monitoring sheet (Sirvani 2007).
- Schools could organise an open day in the first week of secondary school where parents are invited to attend lessons to overcome negative experiences and also to help parents understand what children are doing in school. Of course, the logistics of this will have to be carefully planned, e.g. different days are scheduled for parents to observe different lessons. These lessons can be held in big lecture rooms or in the hall in the first week of term. Parents can also subsequently arrange to visit schools if they wish or if they have concerns about how their child is doing. Teachers could also invite parents to attend lessons for part of the day.

It is important to note that these suggestions are made for the short term only. There is not enough good evidence to make any of these approaches widespread practice. Instead, further specific research is needed (see final section), and most crucially a way must be found to engage the less willing in such interventions.