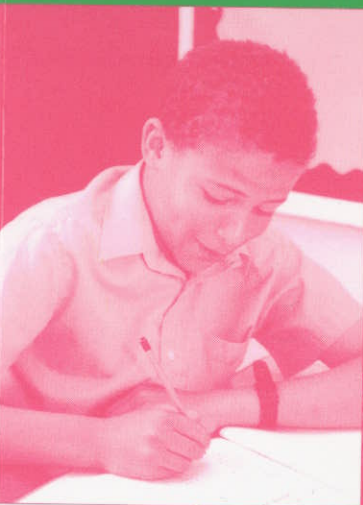# HOMEWORK

A REVIEW OF RECENT RESEARCH

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Contents

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

This review was commissioned by Ofsted. It set out to identify the best evidence from recent research into homework. It considered research literature published between 1988 (the year of the Education Reform Act) and 2001. The review also considered literature reviews and Ofsted reports published immediately before 1988, in order to take account of the findings from previous research.

Homework time

The relationship between time spent on homework and academic achievement has been the focus for a number of research studies, including international comparative studies. The best evidence from research into time on homework shows:

- There is a positive relationship between time spent on homework and achievement at secondary school level (especially for older secondary students). Evidence at primary school level is inconclusive, because fewer studies have been carried out at primary level and results have been inconsistent.

- Time spent on homework explains only a small amount of the variance in pupils' achievement scores, even at secondary level.

- Studies conducted in the USA indicate that among younger (primary-age) children, lower achievers spend longer on homework. The trend is reversed among older students, where higher achievers tend to spend more time on homework.

- US research indicates that girls tend to spend more time on homework than boys, and pupils from Asian backgrounds spend longer on homework than students from other ethnic groups. One study has suggested that Asian-American students make more productive use of their homework time.

- Several international studies suggest that the relationship between time on homework and academic achievement may be curvilinear: pupils doing either very little or a great deal of homework tend to perform less well at school than those doing 'moderate' amounts.

- Correlations between time on homework and achievement should not be taken as evidence that more time on homework necessarily leads to better achievement.

Homework and pupil attitudes

There is a limited body of research on pupils' attitudes to homework.

- On the whole, pupils have positive attitudes to homework, and feel it is important in helping them to do well at school. Positive attitudes to homework are associated with positive attitudes to school.

- The limited research into pupils' preferences indicates that pupils dislike being set routine homework tasks (such as finishing off classwork) which do not contribute to their learning. They prefer interesting, challenging and varied tasks that are clearly defined and have adequate deadlines.

- Pupils' attitudes to homework appear to be related to characteristics such as age and cultural background. Several recent studies show that girls are more willing to spend time on homework than are boys.

- There are contradictory findings regarding the relationship between amount of homework and pupil attitudes.

- The suggestion that setting homework for primary-age pupils instils positive attitudes towards studying has received very little attention in the research literature.

Homework tasks, marking and feedback

There is a disappointing lack of reliable evidence on 'what works' in terms of homework assignments, procedures, marking and feedback.

- There is insufficient definitive research into the impact of: different types of assignment; homework planners; the use of new technology; and different approaches to marking and feedback.

- A previous review reached the conclusion that setting individualised homework tasks is time-consuming for teachers and does not appear to raise pupil achievement sufficiently to justify the additional time required.

Homework for lower-achieving pupils

There is a small amount of research into homework for lower-achieving pupils (including pupils with moderate learning difficulties), most of which originates in the USA. The two main issues for teachers would seem to be: how to set appropriate assignments; and how to encourage lower-achieving students to complete their homework.

⊕ There is some evidence to suggest that the following strategies may be particularly helpful for lower achievers: parental communication and involvement; devising short, relevant tasks; homework planners/diaries; and teaching students self-monitoring techniques.

⊕ Several researchers have recommended that teachers of pupils with low achievement/learning difficulties should tailor homework assignments to meet the needs of individual pupils. However, one study suggested that pupils feel there is a stigma attached to receiving different homework from their classmates. This implies that teachers need to handle the issue of differentiation with sensitivity.

Parental involvement in homework

The research on direct parental involvement in children's homework shows:

⊕ In general, parents want schools to set homework, although homework can be a cause of conflict between parents and children.

⊕ Parents are more directly involved in homework when their children are younger. The degree and type of parental involvement in homework are related to cultural and socio-economic factors.

⊕ Research does not indicate a clear relationship between the amount of parental involvement in homework and pupils' achievement at school.

⊕ Parental involvement in homework takes different forms, and these appear to have different relationships with pupil achievement. It is possible for parents to intervene in either appropriate or inappropriate ways.

⊕ Research into specific reading initiatives indicates that parental involvement is not sufficient for success. Again, the type of involvement may be the key factor.

The homework environment

Research has considered a number of issues concerning the environment for homework.

- One study indicated that pupils who spend time on a range of after-school learning activities (such as reading, homework and extra-curricular clubs) perform better at school.

- Parents can exert an influence on the homework environment, through creating appropriate conditions for learning and encouraging their children to complete their homework tasks. By intervening in this way, parents encourage children to spend time on homework, which may, in turn, be associated with achievement at school.

- Although neither extensive, nor entirely consistent, the research evidence suggests that more time spent viewing television is associated with less time spent on homework, and may therefore have an indirect effect on achievement at school.

- There is evidence that pupils have individual preferences or 'homework styles', which relate to aspects of the environment and mode of learning (visual, text, aural etc.). These preferences are also related to cultural and gender differences.

- The results from one intervention study suggest that secondary pupils learned better when they were given homework advice related to their individual learning style.

- There is little research evidence to date on the impact of organised homework clubs on pupil outcomes. However, initial evidence suggests that these clubs offer both access to learning resources and a social environment that is conducive to study.

Priorities for future research

There is an urgent need for further research into homework in this country, particularly given the recent publication of national guidelines on homework. The main priorities are set out below.

⊚   Research into the costs and benefits of homework for pupils, parents and teachers, especially at primary school level.

⊚   Studies using an experimental design to assess the effectiveness of different homework interventions, such as homework designed to encourage specific types of parental involvement, different types of homework tasks, use of homework planners, and different approaches to marking and feedback.

⊚   Studies investigating the application of new technology in relation to homework.

⊚   Research into the impact of homework on pupil attitudes.

⊚   Research aimed at identifying effective homework practices for lower-achieving pupils and pupils with special educational needs.

⊚   Studies focusing on the impact of the homework environment and form of task in relation to individual learning styles.

⊚   Studies considering the relationship between homework for younger (primary-age) children and the development of self-regulated learning.

About the review

This review was commissioned by Ofsted, to help inform policy and practice. The approach to identifying relevant material was thorough and wide-ranging. Each piece of literature was assessed systematically in relation to its pertinence and quality. Evidence from the best studies (in terms of study design and research quality) was used to provide the overview of research findings. Summaries of each piece of research have been compiled into an annotated bibliography, available from the NFER website (Sharp *et al.*, 2001). Over 100 studies were included, just under half of which were conducted in the USA. Over a third of the studies were carried out in the UK (mainly in England). The review also included evidence from research carried out in other countries.

1. INTRODUCTION TO THE REVIEW

This review had its origins in 1997, when the Office for Standards in Education (Ofsted) carried out an investigation into homework practices to support the Department for Education and Employment (DfEE) in the development of draft national homework guidelines. Ofsted commissioned the NFER to put together a bibliography of research literature on homework to inform their advice to the DfEE (see Weston, 1999).

The initial bibliography was completed within very tight deadlines and it was not possible to include all relevant studies or to produce an overview of findings. However, in 2000, Ofsted agreed to fund a further piece of work to expand and update the review.

1.1 Scope and methods for identifying relevant material

The main aim of this literature review is to provide an overview of research into effective homework practices and their impact on pupils, parents and teachers. The first step was to set clear parameters for the kind of material we were seeking. Therefore the searches were restricted to:

● research-based published literature;

● publications in the English language;

● material published from January 1988 (i.e. after the Education Reform Act) to December 2000 (when the review was completed).

Ofsted asked for the review to cover the following aspects, as far as possible:

● school practice (policy, planning, checking, marking and feedback);

- impact on pupils (attitudes to study, academic progress, suitable amounts of time spent);

- impact on parents (home–school compacts/contracts, home study facilities, homework diaries, home reading schemes, support from schools on how to help their children);

- impact on teachers (attitudes, preparation, marking);

- alternative facilities (homework clubs in schools and public libraries);

- resources for homework (access to books and other learning materials).

The main method used to identify relevant research literature was to conduct searches of electronic and on-line databases using keywords and free-text searches. (A detailed account of the search strategy is provided in the Appendix: it should be noted that it was not possible to identify relevant research in all of the areas identified above.) As the books and articles arrived, the references cited in them were checked, and further material was ordered. Contacts were made with key organisations and individuals in an attempt to identify additional relevant material.

1.2 Analysis of research literature

As each piece of research was received, it was scrutinised for its pertinence to the remit of the review. Several pieces of work were rejected at this stage because they did not fall within the scope of the review (e.g. research into 'homework' consisting of behavioural objectives for parents of children with special educational needs). Others were rejected because they were purely descriptive/opinion pieces, rather than based on research; because they were very small-scale; or in a few cases, because they were judged to be of such poor quality that the findings were unreliable.

The work was undertaken by a team of seven experienced researchers. A framework was developed to aid the analysis and writing of each individual summary. This placed the focus on specific aspects of the research design, sample, methods and findings of the research, in relation to homework. The framework also included space for reviewers to record the implications for policy and practice highlighted by the report's authors. The final part of the framework invited the

reviewer to comment on the quality of the research and to draw attention to issues of particular interest to the review. All reviewers were provided with training and detailed guidance on how to summarise information for the bibliography.

In the case of certain statistical papers, reviewers sought a second opinion from senior statisticians at NFER on the appropriateness of the techniques used and/or the validity of the conclusions reached. The points they made were incorporated into the 'reviewer's comments' section of the framework.

1.3 Our approach to systematic review

The purpose of the review was to contribute to current thinking and the development of policy. Because the meaning and functions of homework have changed over the years, it was decided to focus our attention on the more recent studies, published from 1988 (the year of the Education Reform Act).

The review set out to include as much relevant material as possible. A number of studies were rejected: mostly on the grounds of pertinence but also on the grounds of quality. These included any studies considered to be seriously flawed in design, execution or reporting. All other relevant studies were included in the bibliography, with comments on the quality and interpretation of their findings. The bibliography is available from the NFER website (Sharp *et al.*, 2001).

In putting together the overview of evidence, the authors relied on the best evidence available to answer questions of interest to the review (Slavin, 1986). A best-evidence approach prioritises evidence from studies that have the most appropriate design and are of the highest quality. Studies of lesser merit are either excluded, or, where there is little alternative, they are included with comments on their limitations. This means that the overview does not include all the studies summarised in the bibliography.

For example, the best evidence on 'what works' is provided by well executed experimental studies, preferably using a randomised system to allocate individuals to either a treatment or control group. Information on pupils', parents' and teachers' perceptions and concerns can be provided by surveys and interviews. If we want to know

whether the findings are typical of, say, all secondary parents, the best evidence would be provided by research that selected a large, representative sample and achieved a high response.

Many of the studies have used statistical techniques to establish whether two variables are related to one another (for example, whether time spent on homework is related to achievement). Simple correlational studies can establish whether or not such a relationship exists, whether the relationship is positive or negative (i.e. whether more time on homework is associated with higher or lower achievement), and how sure we can be that the association has not happened by chance (e.g. the significance level).

The main limitation of these studies lies in their interpretation. Correlation does not necessarily imply causation: if higher-achieving students spend more time on homework, the idea that time on homework *causes* better achievement is only one possible explanation. Other possibilities could include the following: higher-achieving students may be more inclined to spend time studying; teachers may assign more homework to students in top streams; higher-achieving schools could set more homework; the higher-achieving group could contain more female students, who spent longer on homework than males; students from more advantaged backgrounds may be able to spend more time on homework because they have parental support, space and facilities at home and do not have to take part-time jobs.

For both practical and ethical reasons, it would be difficult to carry out an experimental study whereby groups of similar students were assigned (and made to complete) different amounts of homework. Therefore, some of the best evidence on the contribution of time on homework to achievement (or other issues, such as the influence of parental involvement in homework on achievement) comes from studies which have used statistical modelling in one of two ways. First, researchers can construct a statistical model to test out assumptions about the way in which variables are related to one another. For example, such a model could assume that parents influence time spent on homework, and that time on homework influences achievement at school. Provided that the assumptions are reasonable (and preferably theory- or evidence-based), the strength of the correlations and the amount of variance in outcomes explained by the model helps to indicate whether one variable (such as time spent on homework) influences the outcome (such as mathematics test scores) and if so, by how much.

The second approach uses some of the more recent developments in statistical techniques (e.g. multilevel modelling) to assess the influence of possible contributing variables (such as social class, gender, school-level achievement, previous attainment) and to control for the influence of these simultaneously. In doing so, the researchers are able to make clearer statements about the influence of one variable in relation to others.

Sample size can be an important consideration in research quality, as can the type of measures used. On the whole, studies including larger numbers of participants and using standardised measures of achievement are preferable to those with smaller numbers relying on self-reported achievement or teachers' grades. Surveys based on small numbers of pupils from a small number of schools are of limited value because we cannot be sure whether or not they are typical of the wider population. However, the review did not exclude all small-scale qualitative studies from consideration, because these can help to illuminate questions about why and how variables are related to one another. Qualitative studies were included where they were considered to add a different dimension to the information provided by quantitative studies. For example, researchers have used interviews and observation to consider how parents help children with homework or how homework centres benefit pupils, parents and schools. Well-conducted qualitative research can provide insights which help to interpret the findings of previous research, or raise issues for consideration in future studies.

1.4 Content of the review

The review has found evidence in the following areas, each of which is summarised below.

- School policy and practice in relation to homework.
- The relationship between time spent on homework and academic achievement.
- Pupil attitudes to homework.
- Results from specific homework interventions.
- Homework for lower-achieving pupils (including pupils with special educational needs).

- Parental involvement in homework (including home reading schemes).

- The homework environment (including resources for learning at home, parental influence on homework conditions, pupils' preferences regarding the homework environment and homework centres in schools and public libraries).

This review contains an overview of research findings using a best-evidence approach. It is based on a bibliography comprising summaries of 101 studies relating to homework, which is available from the NFER's website (Sharp *et al.*, 2001). Between a third and a half of the research studies (40 per cent) were carried out in the USA. Thirty seven per cent were conducted in the UK (primarily in England). A small minority of studies were conducted elsewhere (namely Australia, Canada, Israel and the Netherlands). The review also included 'international' studies (i.e. studies involving more than one country). These made up 16 per cent of the bibliography.

The bibliography of studies mentioned above (Sharp *et al.*, 2001) is divided into eight sections, each dealing with a specific area of the research evidence. The summaries are divided into the same content areas as are addressed in this overview, with the addition of a section dealing with studies and reviews immediately pre-dating 1988. Several of the articles and books included in the bibliography covered more than one area. Each document has been placed in one section according to the main area addressed in the findings. The list of references at the end of this document indicates the location of each summary within the bibliography.

2. WHAT IS HOMEWORK?

Definitions of homework vary, but essentially it is work set by teachers that pupils are expected to complete out of school hours (see Cooper, 1989a and b). Pupils may complete their homework at home or in some other venue, such as a public library or homework centre. They may complete homework alone, with other pupils, or with their parents and other family members.

Teachers have different reasons for assigning homework. Epstein (1998) identified ten common purposes of homework ('the ten Ps').

- **Practice** – to increase speed, mastery and maintenance of skills.

- **Preparation** – to ensure readiness for the next class; to complete activities and assignments started in class.

- **Participation** – to increase the involvement of students with the learning task or enjoyment of the fun of learning.

- **Personal development** – to build student responsibility, perseverance, time management, self-confidence and feeling of accomplishment; also to develop and recognise students' talents in skills that may not be taught in class; extension and enrichment activities.

- **Peer interactions** – to encourage students to work together on assignments or projects, to motivate and learn from each other.

- **Parent–child relations** – to establish communication between parent and child on the importance of schoolwork and learning; to demonstrate applications of school work to real-life situations and experiences; to promote parental awareness of and support for students' work and progress.

- **Parent–teacher communication** – to enable teachers to inform and involve families in children's curricular activities and to enable parents to know what topics are being taught, and how their children are progressing.

- **Public relations**: to demonstrate to the public that the school is a place of serious work, including homework. Also, productive interactions with the public may be designed as student–community homework assignments.

- **Policy**: to fulfil directives from administrators at the district or school levels for prescribed amounts of homework per day or week

- **Punishment**: to correct problems in conduct or productivity.

Epstein (1998) comments that the last purpose (punishment) 'is not a defensible purpose of homework'.

Cooper (1989a and b) has pointed out that homework can have both positive and negative effects. The benefits of homework include: the immediate impact on learning and achievement; development of independent learning; and greater parental involvement in schooling. Negative effects include: satiation (loss of interest in academic material and fatigue); denial of access to leisure activities; parental interference; cheating and increased differences between high- and low-achievers. Other commentators may wish to add emotional stress and conflict between parents and children to the list of negative effects.

Cooper goes on to conclude that 'homework probably involves the complex interaction of more influences than any other instructional device' (Cooper, 1989b, p.87). These influences include student characteristics (such as age, ability, motivation and study habits); features of the homework assignment (such as competitors for time, facilities and materials; involvement of family and peers; guidance on completion); features of the homework environment; and whether and how the homework is followed up in class. These are useful features to bear in mind when considering the evidence resulting from more recent research.

Figure 1.

SUGGESTED EFFECTS OF HOMEWORK
Positive effects

Immediate achievement and learning
    Better retention of factual knowledge
    Increased understanding
    Better critical thinking, concept formation, information processing
    Curriculum enrichment
 	
Long-term academic effects
    Willingness to learn during leisure time
    Improved attitude to school
    Better study habits and skills
 	
Nonacademic effects
    Greater self-direction
    Greater self-discipline
    Better time organisation
    More inquisitiveness
    More independent problem solving
 	
Greater parental appreciation of and involvement in schooling

Negative effects

Satiation
    Loss of interest in academic material
    Physical and emotional fatigue
 	
Denial of access to leisure-time and community activities
 	
Parental interference
    Pressure to complete assignments and perform well
    Confusion of instructional techniques
 	
Cheating
    Copying from other students
    Help beyond tutoring
 	
Increased differences between high and low achievers

From: COOPER, H. (1989). *Homework*. New York, NY: Longman.
Reproduced by permission of Longman Publications.

3. THE RECENT POLICY CONTEXT

This section considers the recent developments in homework policy in this country. As Hallam and Cowan (1998) point out in their review, the meaning and function of homework changes in response to educational, cultural, political and social developments. Until recently, homework has been a common feature of English secondary schools, but has been much less common in primary schools (with the exception of home reading schemes). Since the introduction of the National Curriculum in 1988, homework has come under increasing scrutiny as a possible means of raising standards of achievement. With the introduction of national guidance on homework policy ten years later (DfEE, 1998), homework has become less a matter for choice by individual teachers and schools, and more a matter of national policy.

Until recently, schools in England varied considerably in their approach towards setting homework. For example, a small-scale survey carried out by Ofsted in the mid 1990s (Ofsted, 1994) concluded that primary schools showed 'wide variations' in homework policy and practice, and that secondary school homework policies ranged from 'the well-conceived to the non-existent'. The following year, Ofsted published the results of a special enquiry into homework (Ofsted, 1995). This focused on homework policy and practice in a range of primary and secondary schools. The report concluded that homework could be considered 'an integral part of curriculum planning' in only a minority of primary schools. Homework policies were in place in most secondary schools, but were rarely monitored to ensure their effectiveness.

3.1 National guidance on homework for primary and secondary schools

In 1998, the DfEE published guidelines on homework for primary and secondary schools (DfEE, 1998). Because these were non-statutory, schools were not required by law to follow them.

The DfEE guidance defined homework as: 'Any work or activities which pupils are asked to do outside lesson time, either on their own or with parents or carers' (page 5, para. 9). It advised schools to develop a written policy on homework, as a source of guidance and information for teachers and parents. The DfEE advised that the policy should aim to ensure homework arrangements are both 'manageable and educationally beneficial'.

For primary schools, the guidance contained the following recommended time allocations for homework, beginning with an hour a week, and rising to two-and-a-half hours per week.

Figure 2.

DfEE Recommendations for Homework in Primary Schools		
Year Group	Time allocation	Subjects
Years 1 and 2	1 hour/week	Reading, spellings, other literacy work and number work
Years 3 and 4	1.5 hours/week	Literacy and numeracy as for Years 1 and 2 with occasional assignments in other subjects
Years 5 and 6	30 minutes/day	Regular weekly schedule with continued emphasis on literacy and numeracy but also ranging widely over the curriculum

The guidance suggested that homework has different purposes for children of different ages. For younger children, the main aim should be to engage parents in children's learning. As children get older, it is suggested that homework should provide opportunities for independent learning, and help pupils to develop a habit for studying.

The DfEE report places the main emphasis on homework in literacy and numeracy at primary level. In Key Stage 1, it is suggested that homework should largely consist of children reading with parents, together with other literacy tasks, such as learning spellings and practising punctuation. Other suggested homework assignments include numeracy work (linked with the National Numeracy Strategy) and, for children in Key Stage 2, tasks such as finding out information, reading in preparation for a lesson, and preparing oral presentations, as well as 'traditional' written assignments.

At secondary level, the guidance states that, while the intrinsic value of homework activities is far more important than the precise amount of time devoted to them, it is useful to adopt broad expectations about the amount of time it is reasonable for pupils to spend. The suggested amount of time to be spent by pupils on homework and GCSE coursework is set out in paragraph 45 (page 19) of the report, and reproduced below.

Figure 3.

DfEE Recommendations for Homework in Secondary Schools	
Year Group	**Time allocation**
Years 7 and 8	45 – 90 minutes per day
Year 9	1 – 2 hours per day
Years 10 and 11	1.5 – 2.5 hours per day

Secondary schools are encouraged to coordinate a homework 'timetable' so that students are not required to do too much on some days and not enough on others. They are also encouraged to develop a balanced programme of homework assignments, so that students have opportunities to develop a range of skills, including independent study skills.

In addition to specific recommendations concerning time allocations and types of homework, the guidance lays out some key principles of recommended homework policy, based on the findings of an Ofsted research study into schools demonstrating good homework practice (Weston, 1999). The guidelines encourage schools to view homework as contributing to the school's plan for learning. Schools are recommended to: establish a strategy; ensure clear communication with parents and pupils; and plan homework to complement and not simply complete work in class. The guidance suggest that teachers
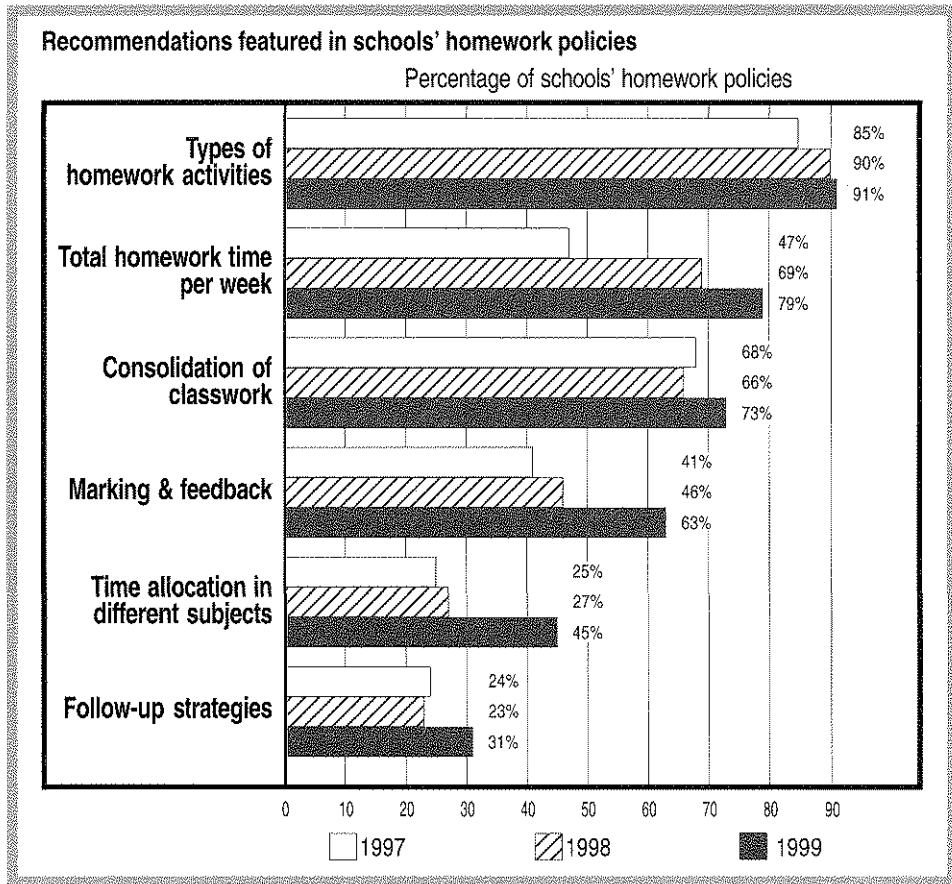
should take account of their pupils' learning needs (and offer differentiated tasks where necessary); devise strategies to involve parents in their children's learning; and provide feedback showing pupils what and how to improve. Recommended practice also includes investing resources into homework, producing a schedule of tasks and ensuring staff and pupils comply; and introducing a system of monitoring, review and evaluation of the homework policy to ensure its effectiveness in fulfilling its aims.

In making these recommendations, the DfEE was drawing on a number of sources of information and advice. The evidence from this review of research is limited in its direct application to practice, because studies have tended to document what is happening (and what people consider should happen) rather than assess whether different aspects of policy are more or less effective. Nevertheless, the recommendations for good practice made in the DfEE guidelines are similar to those made by Ofsted inspectors as well as several researchers in the field, especially regarding parental information and involvement (Balli, 1998; Balli *et al.*, 1998; Hoover-Dempsey *et al.*, 1995; MacBeath, 1996; MacBeath and Turner, 1990; Ofsted, 1995); school coordination of homework expectations and deadlines (Harris and Rudduck, 1994; Johnson and Pontius, 1989; Ofsted, 1995; Weston, 1999); type and variety of tasks (MacBeath, 1996; MacBeath and Turner, 1990; Ofsted, 1995); and feedback on homework performance (MacBeath, 1996; MacBeath and Turner, 1990; Ofsted, 1995; Weston, 1999). (The research evidence concerning time spent on homework is examined in detail in Section 4 of this review.)

The impact of these guidelines on primary school policy can be traced through a series of annual surveys conducted by the NFER. In 1997, just under two-thirds of the responding primary schools had a homework policy (Osgood and Keys, 1998), and the figure was much the same in 1998 (Birmingham *et al.*, 1999). However, by the Autumn of 1999, the proportion of schools with homework policies had risen sharply to almost 90 per cent, with schools serving older pupils more likely to have a homework policy than those taking pupils in Key Stage 1 only (100 per cent of junior and middle schools compared with 75 per cent of infant and first schools) (Felgate and Kendall, 2000).

The content of homework policies also underwent some changes, with policies in 1999 being more likely to include guidance on time allocations for homework, and information on marking and feedback (Felgate and Kendall, 2000).

Figure 4.   Primary school homework policies

Recommendations featured in schools' homework policies

Percentage of schools' homework policies

Category	1997	1998	1999
Types of homework activities	85%	90%	91%
Total homework time per week	47%	69%	79%
Consolidation of classwork	68%	66%	73%
Marking & feedback	41%	46%	63%
Time allocation in different subjects	25%	27%	45%
Follow-up strategies	24%	23%	31%

□ 1997   ▨ 1998   ■ 1999

FELGATE, R. and KENDALL, L. (2000). *Headteachers' Main Concerns* (Annual Survey of Trends in Education, Digest No. 8). Slough: NFER.

4. TIME ON HOMEWORK AND ACHIEVEMENT

One of the questions most commonly addressed in the research on homework is:

Does spending more time on homework improve pupils' academic achievement?

This is a deceptively simple question. Leaving aside questions about the *content* and *appropriateness* of the homework task, there are different ways of defining time on homework. For example, are we talking about the total amount of time or frequency of setting homework? And does it matter whether or not pupils have actually completed their homework tasks in the time? Also, studies differ as to whether they take the teacher or the pupil as the unit of analysis (i.e. whether they assess the average amount of time teachers expect their pupils to spend on homework, or the amount of time actually spent by individual pupils). This is an important distinction, not least because pupils of differing ability are likely to spend different amounts of time completing the same task. There is also the accuracy of self-report data to consider: how confident can we be that young people are both able and willing to reveal the actual amount of time they spend doing homework?

The question presupposes a fairly straightforward, causal relationship between time spent on homework and achievement. As explained in the introduction, the difficulty here is that it is easier to identify relationships between two variables than it is to be certain about causality.

4.1 Evidence from the USA on homework time and achievement

Harris Cooper and his colleagues have carried out some of the most thorough work in this area. The results of Cooper's meta-analysis, drawing on work conducted largely in the USA (Cooper 1989a and b; 1994) and his own empirical research in the USA (Cooper *et al.*, 1998; 1999; 2000), have led to the conclusion that time on homework has a positive association with achievement at secondary level, and that the effects are strongest for older students. Also, for older students there is a positive association between attainment and the number of homework assignments per week. There has been less extensive research at primary level, but the findings indicate either no relationship, or a very small positive association between time on homework and achievement at school. Interestingly, Cooper's analysis of a small number of intervention studies found that for primary-age pupils, in-class supervised study produced better results than homework, although the opposite was the case for pupils of secondary age (Cooper, 1989a; 1994). Cooper (1989a) reviewed nine detailed studies and concluded that for junior high school students, achievement improved as students spent more time on homework, to the point when assignments lasted between one and two hours per night. For high school students, the line of progress continued to improve through the highest point measured (over two hours per night).

Cooper went on to set out some guidelines about the amount of time school districts should set for 'mandatory' assignments (Cooper, 1989a). These are somewhat lower than the DfEE recommendations outlined above (DfEE, 1998). For example, Cooper recommends up to 45 minutes for pupils in Years 2 to 4 (compared with up to one-and-a-half hours recommended by the DfEE) and up to one-and-a-quarter hours per evening for students in Year 9 (compared with the one to two hours recommended by the DfEE).

On the question of whether pupils of differing ability spend different amounts of time on homework, the answer would seem to be that they do, but that the pattern of relationships appears to change as children get older. Studies of primary-age pupils have found that lower-achievers spend more time on homework (Epstein, 1988), whereas studies of older, secondary-age pupils have found that higher achievers tend to spend more time on homework (Keith and Cool, 1992; Keith *et al.*, 1993).

There have also been a small number of studies concerning the relationship between gender, ethnicity and homework time. Although Cooper (1994) found no differences in the *effects* of homework on girls and boys, other research has suggested that girls tend to spend longer on homework than boys (Bonyun, 1992; Chen and Stevenson, 1989). Two studies have found that students from Asian ethnic backgrounds spend more time on homework than students from other ethnic groups (Keith and Benson, 1992; Mau and Lynn, 1999). The work by Keith and Benson (1992) considered the impact of ethnicity on academic achievement among high-school students. Their results indicated that not only did Asian-American students tend to spend more time on homework than students from other ethnic groups, but that their homework time was more productive in relation to academic achievement (i.e. each hour spent by Asian-American students was more highly correlated with high school grades than was true of other ethnic groups).

These findings demonstrate the importance of taking pupil characteristics, such as age, gender and ethnicity into account when considering the impact of homework on achievement.

4.2 UK studies on homework time and achievement

The findings of research from this country on the relationship between time on homework and achievement are largely in line with the findings from research in the USA. Two studies have shown a positive relationship at secondary level. Tymms and Fitz-Gibbon (1992) drew on a sample of about 3,000 secondary students whose schools had signed up to their 'value-added' service. They used multilevel modelling to consider the relationship between amount of time students said they spent on homework and their A-level results. The findings indicated a relationship between the amount of time students reported spending on homework and A-level achievement, but the influence was relatively small (students who spent seven hours a week or more on homework for a subject achieved about a third of a grade better than students of the same gender and ability who spent less than two hours per week on homework). Interestingly, and in contrast to findings from the USA, Tymms and Fitz-Gibbon found that among their sample, secondary students with lower prior achievement spent more time on their homework.

A much smaller-scale study by Holmes and Croll (1989) found a positive relationship between the time a sample of boys from one grammar school said they spent on homework and their achievement at GCSE, even after controlling for differences in verbal reasoning scores on entry to school.

Two English studies have addressed the relationship between homework and achievement at primary-school level, drawing information from a database of primary schools using a value-added service (Farrow *et al.*, 1999; Tymms, 1997). Both studies used statistical techniques to allow for differences in pupils' initial attainment.

In the first study, Tymms (1997) reported that Year 6 pupils who did homework more than once a week achieved significantly higher progress scores in a test of science than pupils who did homework less often, but the educational significance of this finding (indicated by the effect size) was small. Subsequently, Farrow *et al.* (1999) found 'slight' support for the view that homework in Year 6 was positively associated with performance in mathematics and science. Highest test scores in mathematics and science were achieved by Year 6 pupils who reported doing homework in these subjects 'once a month' (compared with no homework, homework once a week, or more frequently). Interestingly, this study also reported that there was 'almost no correlation' between pupils' ability (as indicated by their non-verbal test scores) and their frequency of doing homework. It is possible that these results were influenced by the fact that homework was not a common feature in all primary schools at the time of the study.

4.3 International comparisons on homework time

International comparative studies are another major source of information on relationships between time on homework and achievement. There are several key findings concerning time on homework, at both secondary (Beaton *et al.*, 1996 a and b; Keeves, 1995; Keys *et al.*, 1997a; Lapointe *et al.*, 1992) and primary level (Chen and Stevenson, 1989; Keys *et al.*, 1997b; Mullis *et al.*, 1997). These studies found that there was often a within-country relationship between time on homework and achievement in mathematics or science, but the relationships were both inconsistent and weak. They

did not occur in all countries and tended to account for only a small proportion of the variance in attainment scores.

Although results from a few countries have shown a linear relationship between time on homework and achievement, it is more common for the relationship to be curvilinear (i.e. pupils doing the most and least amounts of homework do less well than pupils doing 'moderate' amounts) (Beaton *et al.*, 1996a and b; Keys *et al.*, 1997b; Mullis *et al.*, 1997). The definition of 'moderate amounts' of homework appears to vary between countries, although Beaton *et al.* (1996a and b) reported a trend in several countries for 13-year-olds spending between one and three hours per day on homework in all subjects to score highest in both mathematics and science. In comparison, the amount of time recommended by the DfEE for pupils in Year 8 (up to one-and-a-half hours per day) sits within the lower part of this range.

4.4 Summary of main findings from recent research into homework time and achievement

To summarise, the best evidence from research into time on homework shows:

■ There is a positive relationship between time on homework and achievement at secondary-school level (especially for older secondary students). Evidence for a positive relationship between homework and achievement at primary-school level is inconclusive, due to fewer studies and inconsistent results.

■ Time spent on homework explains only a small amount of the variance in pupils' scores, even at secondary level.

■ Studies conducted in the USA indicate that among younger (primary-age) children, lower-achievers spend longer on homework. The trend is reversed among older students, where higher achievers tend to spend more time on homework. (This finding has not been confirmed in studies conducted in the UK.)

■ A small body of research conducted in the USA indicates that girls tend to spend more time on homework than boys, and pupils from Asian-American backgrounds spend longer on homework than students from other ethnic groups. One study suggests that Asian-American students also make more productive use of their homework time.

■ Several international studies suggest that the association between time on homework and attainment may be curvilinear: pupils doing either very little or a great deal of homework tend to perform less well at school than those doing 'moderate' amounts.

■ Research into time on homework and academic achievement is difficult to interpret because of variations in definitions and sources of information.

■ Correlations between time on homework and achievement should not necessarily be taken as evidence that more time on homework leads to better achievement.

5. PUPIL ATTITUDES TO HOMEWORK

The review has enabled us to address five main questions regarding pupils' attitudes to homework.

What are pupils' opinions of homework, and how do these relate to attitudes to school?

What kinds of homework do pupils prefer?

Do pupil attitudes to homework vary according to characteristics such as age-group, gender and cultural background?

Do pupils' attitudes vary according to the amount of homework set?

Does homework help to instil positive attitudes and study habits?

5.1 Pupils' opinions of homework

As a result of his meta-analysis, Cooper (1989b) discovered relatively few studies that had investigated pupil attitudes to homework. After synthesising the results from these few studies, he concluded that homework had no significant effect on how pupils felt about school, their teachers or the subject matter (Cooper, 1989a). Since then, there have been a number of studies conducted in this country and elsewhere that have reported findings concerning pupils' attitudes to homework.

In general, the more recent research finds that pupils hold positive views about homework, seeing it as important in helping them to do well at school. This is true of studies conducted in the UK (Keys and Fernandes, 1993; Keys *et al.*, 1995; MacBeath and Turner, 1990), as well as in the USA (Black, 1990).

Although relatively few studies have investigated the matter since Cooper's 1989 meta-analysis, there are consistent findings showing that positive attitudes to homework are related to positive attitudes to school (Chen and Stevenson, 1989; Keys *et al.*, 1995; Leung, 1993). However, as with other correlational studies, it is impossible to know whether positive attitudes to homework actually cause positive attitudes to school.

5.2 Pupils' preferences for different kinds of homework

There appears to be relatively little research into pupils' attitudes to different kinds of homework, especially at primary-school level. However, the small number of studies that do address this issue reach similar conclusions. For example, a study of students in two US secondary schools (Black, 1990) concluded that students resented homework that was tedious, boring and amounted to 'busy-work'. The students also complained of problems with workload, arising from teachers in different departments setting homework at the same time. What they wanted were assignments that were individualised, creative and challenging.

MacBeath and Turner (1990) asked a sample of pupils from 13 Scottish primary and secondary schools about the homework tasks they preferred. Pupils said that they enjoyed and valued homework when it was: well-explained; had adequate deadlines; interesting/varied; and at their level. Similarly, a study of Year 8 students in three English schools (Harris and Rudduck, 1994) found that students disliked doing homework that neither consolidated nor contributed to their learning.

There is some evidence on pupils' preferences for different homework tasks from enquiries conducted by Her Majesty's Inspectors. A special enquiry into homework conducted just before 1988 (DES, 1987) concluded that pupils enjoyed imaginative or challenging tasks, but resented low-level work, such as copying from textbooks. A later enquiry by Ofsted (1995) suggested that secondary pupils responded best to homework when they clearly understood what was expected of them.

5.3 Relationships between pupil characteristics and attitudes to homework

Pupils' attitudes to homework do appear to vary according to background factors, such as gender, age and cultural background. For example, as well as spending more time on homework, female students tend to have more positive attitudes towards it than is true of males (Bonyun, 1992; Chen and Stevenson, 1989; Harris *et al.*, 1993; Keys *et al.*, 1995). A qualitative study by Harris *et al.* (1993) shed some light on the way in which attitudes to homework were related to gender. The researchers concluded that the English Year 11 students in their study showed a 'gendered approach' to homework: girls were more prepared to do school work at home and to discuss homework with their peers, whereas boys wanted to separate school from home and spent more of their spare time doing other activities.

Two studies considered the attitudes of children of different ages. They found that older pupils were less likely to hold positive attitudes towards homework (Leung, 1993) and that pupils' reasons for doing homework differed with age (Warton, 1997; discussed in more detail in Section 5.5).

5.4 Relationships between amount of homework and pupil attitudes

Does giving pupils too much homework make them resentful and affect their attitudes to school? Do pupils with poor attitudes to school spend less time on homework? Such questions about the relationship between time on homework and pupil attitudes are not easy to answer from the available evidence. As noted above, Cooper's meta-analysis (Cooper, 1989a) found no significant relationship between amount of homework and attitudes to school. However, in his own empirical research, Cooper *et al.* (1998) found different relationships between homework time and attitudes among pupils of different ages. Greater amounts of homework assigned by teachers were associated with negative attitudes to homework among younger children (equivalent to Years 3 and 5), but this was not the case for older, secondary-age students.

In contrast, Farrow *et al.* (1999), found that frequency of doing homework was related to positive attitudes (to core subjects and to school) among English Year 6 pupils. However, this relationship did not hold when the data were analysed at the level of the school (i.e. individuals who reported doing homework more frequently had more positive attitudes, but schools setting homework more frequently did not necessarily have pupils with more positive attitudes). In their study of pupil attitudes to school, Keys and Fernandes (1993) found that time spent each day on homework by pupils in Years 7 and 9 was a significant predictor of positive attitudes to school, although the amount of the variance explained by time on homework was very small.

In their international comparative study, Chen and Stevenson (1989) pointed out that although American children spent less time on homework than children in Japan and China, they also had the least positive attitudes towards homework of the three countries studied. It is possible that this finding is related to cultural attitudes towards the importance of homework: teachers in the USA accorded least importance to the value of homework, compared with teachers in the other two countries studied.

These contradictory results could be related to differences in the measures of attitudes and time on homework, and the unit of analysis (i.e. time spent by individual pupils or teacher/school assignment practices). They could also be affected by the relative and actual amounts of time involved. This area would benefit from further research designed to tease out the various components of and influences on the relationship between time on homework and pupil attitudes to homework and to school.

5.5 Homework's influence on attitudes to study

It is sometimes suggested that one of the purposes of homework is to instil a positive disposition towards learning (Corno, 2000; Hallam and Cowan, 1998; DfEE, 1998). Indeed, this is one of the main arguments put forward in favour of setting homework for primary-age pupils, in the face of evidence that the effect of homework on achievement for younger pupils is either non-existent or very slight (Cooper, 1989b).

Unfortunately, we found only two studies which attempted to address this issue. The first (Warton, 1997) interviewed a sample of 98 middle-class Australian children aged between seven and 11 years. The research focused on the development of self-regulated learning and personal responsibility as a purpose of homework. It found that older children were more likely to give 'internal' reasons for doing their homework (i.e. reasons related to the contribution of homework to the individual's learning). These contrasted with the largely 'external' reasons given by younger children (i.e. reasons connected with obeying teachers, and avoiding sanctions or emotional consequences of being found out). The author argues that this is an indication that pupils were developing more self-regulated and responsible attitudes, although the study could not establish whether these attitudes came about as a result of doing homework.

The second study (Xu and Corno, 1998) used a case-study approach to observe the behaviour of six 3rd Grade (Year 4) pupils from middle-class backgrounds in New York. It found evidence of pupils using strategies such as 'self-talk' to keep themselves motivated and prevent themselves from becoming too frustrated while doing homework. The authors suggest that this small-scale study demonstrated children as young as eight are able to acquire self-regulatory strategies and organisational skills when doing homework with their parents.

These two studies provide an interesting insight into self-regulation in relation to homework, but they do not prove whether doing homework facilitates the acquisition of self-regulatory skills. This is another area that could clearly benefit from further research.

5.5 Summary of main findings from recent research into homework and pupil attitudes

The research on pupils' attitudes to homework shows:

- On the whole, pupils have positive attitudes to homework, and feel it is important in helping them to do well at school.

- Positive attitudes to homework are associated with positive attitudes to school.

- The limited research into pupils' preferences indicate that pupils dislike being set routine homework tasks which do not contribute to their learning. They want interesting, challenging and varied tasks that are clearly defined and have adequate deadlines.

- Pupils' attitudes to homework are related to characteristics such as age and gender. Several studies show that girls are more willing to spend time on homework than are boys.

- There are contradictory findings regarding the relationship between amount of homework and pupil attitudes. This is probably related to the use of different definitions and the intervention of mediating factors, such as age, cultural values and ability.

- The supposition that setting homework for primary pupils helps to instil positive attitudes towards studying has received very little attention in the research literature, and therefore cannot be taken as evidence-based.

6. EVALUATIONS OF SPECIFIC HOMEWORK INTERVENTIONS

This short section considers the recent research into specific interventions designed to improve homework. Only the evidence from general interventions is considered here: those relating to lower-achieving pupils, parental involvement or the homework environment are discussed in the relevant sections.

Cooper's (1989a) meta-analysis revealed no conclusive evidence on the effectiveness of different kinds of assignment and feedback from teachers or even whether homework with feedback was more effective than homework without. He also concluded that individualising homework assignments had a minimal effect on pupil achievement, but added substantially to teachers' workloads (Cooper, 1989a). (The case for individualising homework assignments for lower-achieving pupils is considered below.) We were unable to identify any intervention studies focusing on the effectiveness of different types of homework, published after 1988. However, a recent narrative review considered the literature on classroom formative assessment (Black and Wiliam, 1998a and b). The authors made the following recommendation concerning tasks and feedback:

> *Tests and homework exercises can be an invaluable guide to learning but the exercises must be clear and relevant to the learning aims. The feedback on them should give each pupil guidance on how to improve, and each must be given opportunity to help to work at the improvement.*
>
> (Black and Wiliam, 1998b, p13.)

The searches for our review of homework identified three general intervention studies published after Cooper's meta-analysis (Barrett and Neal, 1992; Chavous, 1996; Gennaro and Lawrenz, 1992). We do not intend to give a great deal of space to discussing these studies because of concerns about their generalisibility. However, the study

by Gennaro and Lawrenz found that parents liked using specially designed science kits; Chavous (1996) demonstrated improvements in pupils' attitudes towards homework following the introduction of a homework 'calendar' (similar to a homework diary); and Barrett and Neal (1992) showed that a telephone helpline was ineffective because very few pupils chose to use it.

It is disappointing that we were unable to find more recent, high-quality intervention studies, particularly studies of the effects of different types of homework marking and feedback strategies. Also, it would be useful to have evidence from studies of the impact of new technology on homework (for example, evaluations of websites offering to help pupils with their homework assignments).

6.1 Summary of main findings from recent research into specific homework interventions

The main conclusions about research into interventions are:

- The research evidence suggests that the additional work involved in individualising homework assignments is not justified by its impact on pupil achievement.

- Although many researchers offer suggestions for teachers related to their research findings, there is an insufficient body of research to provide definitive advice for teachers about effective homework practices.

7. HOMEWORK FOR LOWER-ACHIEVING PUPILS

This section considers research into homework for lower-achieving pupils, including pupils with special educational needs. In reviewing this evidence, it is important to explain that most of the research studies have taken place in the USA, and are therefore operating within a definition of 'students with learning disabilities' that includes pupils who are not performing well at school (e.g. those 'at risk' of repeating a grade) as well as children with moderate learning difficulties who are taught in mainstream schools.

The research evidence here allows us to address one central question:

> Which approaches to homework are most appropriate for lower-achieving pupils?

However, before considering the research evidence, we thought it would be helpful first to identify the main issues relating to homework for lower-achieving pupils in this country.

7.1 Issues concerning homework for lower-achieving pupils

The findings from HMI and Ofsted reports, as well as research studies conducted in the UK, would seem to raise a number of issues concerning homework for lower-achieving pupils. Lower-achieving secondary students may be set less homework (Ofsted, 1994) and can feel 'disenfranchised and resentful' as a result (MacBeath, 1996). However, when teachers set pupils the same homework, regardless of ability, they can be faced with a poor level of homework completion from the less able (DES, 1987). This has led to the suggestion that teachers should attempt to 'individualise' or differentiate homework tasks in relation to the ability of their pupils (MacBeath, 1996; DfEE, 1998).

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7.2 Evidence from the USA on homework and lower-achieving pupils

In 1994, Cooper and Nye published a review of the research literature on homework for students with learning disabilities. Their definition of 'students with learning disabilities' seems to equate with what we might refer to as lower- or under-achieving pupils (i.e. those within the normal range of intelligence who show significant underachievement in one or more areas). It is important to note that their review did not include studies of pupils whose underachievement was related to emotional disturbance, economic disadvantage, lack of educational opportunity, or severe learning difficulties.

Cooper and Nye (1994) concluded that there was too little high quality research on which to base firm conclusions. However, they suggested that the following approaches may be helpful: improved planning by teachers; setting simple and short homework tasks that were appropriate to the needs of the pupil; the use of monitoring and rewards; and involving parents.

Since the review by Cooper and Nye was published, there have been a number of research studies of two main types: surveys attempting to establish teachers' and parents' views; and intervention studies designed to improve homework completion among lower-achieving pupils.

7.3 The views of teachers, parents and lower-achieving pupils concerning homework

Bursuck et al. (1999) asked a sample of US special education teachers to rank a list of recommendations for homework communication in order of importance. The most highly ranked suggestions included: requiring students to keep a 'daily homework assignment book'; that parents should ask their children about homework each day; and that the school should promote better communication with parents (e.g. through telephone 'hotlines' and releasing teachers to talk to parents).

In another part of the same study, Epstein *et al.* (1999) reported that general education teachers had similar homework priorities to those of special education teachers.

Does parental involvement encourage lower-achieving students to complete their homework? This question was addressed in a study of secondary schools in Quebec. Deslandes *et al.* (1999) surveyed teachers and students. The sample included both students in general education classes and pupils with learning disabilities or behavioural problems. For students with learning disabilities, the study found a positive association between parental 'monitoring' of their children's homework completion and the time pupils reported spending on homework. (Unfortunately, we feel that the findings of this study should be treated with caution due to concerns about the research design and reporting.)

Parents of children with 'learning disabilities' were the focus of a study by Kay *et al.* (1994). This study showed that parents felt ill-equipped to help their child with homework and would value much greater communication with teachers and schools. The type of homework assignments that parents considered suitable for their children were 'real life' tasks, tailored to the needs of the individual child.

As noted above, several studies concerning lower-achieving pupils and those with special needs have recommended that teachers should tailor homework assignments to suit the needs of the individual pupil. However, one study of US secondary students suggested that students do not necessarily support this idea, because of concerns that being given different assignments from the rest of the class could have a negative impact on their self-esteem (Nelson *et al.*, 1998).

7.4 Homework interventions for lower-achieving pupils

We identified two studies of homework interventions designed to help lower-achieving pupils that were published after the review by Cooper and Nye (1994). One of these focused on parents, the other focused on the nature of the tasks and the use of monitoring and reward systems.

Callahan *et al.* (1998) worked with a group of 26 students in one US secondary school who were at risk of school failure (e.g. due to drug and alcohol use, contravening school rules, or poor social and academic skills). The intervention consisted of involving their parents in a training programme lasting three hours, to familiarise them with homework materials and to introduce them to 'self-management' techniques which they could use with their children. The results of this study indicated a significant improvement in homework completion and quality of these students' homework following the training.

Bryan and Sullivan-Burstein (1998) described a study designed by teachers to increase homework completion of pupils of all ages attending an elementary school (including pupils with learning difficulties). The teachers tried a number of different strategies, and found that the most effective were: giving pupils 'real life' assignments plus rewards; using homework planners; and getting pupils to 'graph' their own record of homework completion. These techniques are reported to be most effective in improving homework completion of pupils with learning disabilities. It is interesting to note that, two years after the end of the study, teachers were still using homework planners and the 'graphing' technique. There is no mention of teachers continuing to set 'real life' assignments – perhaps these had proved too time-consuming to be practical?

The results of these two studies, while subject to the usual caveats about generalisability, would seem to indicate that parental involvement, 'real life' assignments, homework planners/diaries and involving pupils in self-monitoring strategies may be fruitful approaches to improving homework completion among lower-achieving pupils.

7.5 Summary of main findings from recent research into homework for lower-achieving pupils

The research into homework for lower-achieving pupils shows:

■ Teachers do not necessarily know what kinds of homework assignment might be appropriate for lower-achieving pupils and face difficulties in getting such pupils to complete homework tasks.

■ There is insufficient evidence to reach firm conclusions about the efficacy of different approaches. Nevertheless, there is some evidence to suggest that the following strategies may be helpful: parental communication and involvement; devising short, relevant tasks; homework planners/diaries; and teaching pupils self-monitoring techniques.

■ Several researchers have recommended that teachers of lower-achieving pupils should tailor homework assignments to meet the needs of individuals. However, one study suggested that pupils feel there is a stigma attached to receiving different homework from their peers.

8. PARENTAL INVOLVEMENT IN HOMEWORK

Homework is one of the major points of connection between pupils, parents and schools. This review enabled us to address four main questions regarding the involvement of parents in their children's homework.

What are parents' views and experiences of homework?

Does parental involvement with homework facilitate pupils' achievement?

Is it possible to increase parental involvement through designing particular kinds of homework?

Does it matter what kind of involvement parents have?

We should be clear about the fact that this review focused specifically on direct parental involvement in homework, rather than on the considerable body of research into parental involvement in children's education. (The role of parents in establishing the conditions for homework is discussed in Section 9 of this report, which deals with the homework environment.)

8.1 Parents' views and experiences of homework

We discovered a small number of research studies concerning parents' views of homework, very few of which were conducted in the UK. The evidence from these few studies suggests that parents believe schools should set homework, although they may have reservations about the amount of their child's free time that is taken up with completing homework tasks (Black, 1990; Hoover-Dempsey *et al.*, 1995; Reetz, 1990; Xu and Corno, 1998). In a relatively early review, Zeigler (1986) suggested that there are two main reasons why parents

want schools to set homework: because it provides evidence of the school's seriousness of purpose; and it gives them a 'window' on their child's experiences at school.

The research evidence shows that the amount of parental involvement varies according to the age of the child, and is much greater with younger children. For example, MacBeath and Turner (1990), in their study of pupils from deprived areas of Strathclyde, found that only 23 per cent of pupils in Years 5 and 6 said they never did homework with their parents, compared with 60 per cent of pupils in Years 11 and 12.

Some studies show that homework can be a source of family conflict (Reetz, 1990; Train *et al.*, 2000; Weston, 1999; Xu and Corno, 1998). Others have suggested that parents are not always sure how best to help their children, and may be reluctant to approach the school for advice (Hoover-Dempsey *et al.*, 1995; Levin *et al.*, 1997; MacBeath and Turner, 1990).

One international comparative study indicated that not all cultures have the same expectation that parents should help their children with homework (Chen and Stevenson, 1989). The researchers studied primary-age children in the USA, China and Japan. Mothers in all three countries said they felt able to help with mathematics and reading homework, but they differed in the extent to which they thought they should do so. Completion of homework was considered to be solely the child's responsibility by 43 per cent of Japanese and 32 per cent of Chinese mothers, compared with only eight per cent of US mothers.

8.2 Parental involvement with homework and its effect on academic achievement

As a result of his meta-analysis, Cooper (1989a) concluded that there was no reliable evidence as to whether or not parental involvement in homework affected pupil achievement. This was also the finding of a later review conducted by Miller and Kelley (1991), who concluded that the evidence on the benefits of parental involvement in homework was conflicting. Subsequent research in Israel (Levin *et al.*, 1997) found no evidence that the amount of parental involvement with homework in Grade 1 was associated with children's achievement in Grade 3.

There are at least three possible explanations for the apparent lack of consistent findings, leaving aside the concerns about the quality of the research:

- the amount of parental involvement with homework has no impact on pupil achievement;

- the picture is confused by the fact that lower-achieving pupils are likely to receive greater amounts of parental help (Chen and Stevenson, 1989; Epstein, 1988; Levin *et al.*, 1997);

- it is not the amount of involvement but the kind of involvement that is important.

The third possibility has recently been addressed in a study by Cooper and his colleagues (Cooper *et al.*, 2000). The researchers explored the effects of different types of parental involvement, based on a survey of over 700 parents in three school districts of Tennessee. They found evidence of three main dimensions of parental support for homework, namely: support for children's autonomy; direct involvement in homework; and the elimination of distractions. For older (secondary) students, a fourth dimension emerged, which the researchers described as 'parental interference' (i.e. parental involvement aimed to make homework go faster; involvement in homework that pupils were supposed to complete on their own; and involvement that parents admitted had resulted in making the homework task harder for their child).

The researchers went on to find some interesting, although not entirely unexpected associations between parenting style and the age of the child. Parents of younger (primary-age) children reported more direct involvement, whereas parents of older (secondary-age) children reported more support for autonomy. There was also an association between parenting style and home background: parents from less affluent backgrounds reported less support for autonomy and more interference.

When the researchers considered the relationship between parenting style and pupil achievement, they found that parents who gave more support for autonomy tended to have children who achieved higher marks in standardised tests and teacher grades. On the other hand, direct involvement was associated with lower test scores and grades, especially for primary-age pupils. (The researchers point out that this relationship could be a result of parents responding to the needs of lower-attaining children, rather than higher levels of involvement causing the lower scores.)

The findings from this study suggest that it is not simply the amount of parental involvement but the type of involvement that is important (a conclusion also drawn by others, including Epstein, 1988; and Keith *et al.*, 1993). But it would take an experimental study to show whether persuading parents to adopt different strategies would have an impact on pupils' achievement.

We discovered two evaluation studies concerning a specific intervention designed to increase parental involvement with homework tasks (Balli *et al.*, 1998 and Epstein *et al.*, 1997). Because the former study used an experimental design, we have chosen to rely more heavily on its findings.

Balli *et al.* (1998) reported the results of an intervention in mathematics classes involving 74 sixth-grade (Year 7) students from the same school. This intervention used a homework scheme, called Teachers Involve Parents in Schoolwork (TIPS) that required pupils to interact with a family member. The findings showed that parents reacted positively to the initiative, and said they felt better-informed about their child's work as a result. The homework assignments proved effective in increasing family/parental involvement with homework, but did not appear to have a significant impact on pupils' achievement.

8.3 Parental influence and time on homework

Two groups of researchers constructed theoretical models to consider the relationships between aspects of parental involvement, time on homework and achievement. Bowen and Bowen (1998) gathered information from over 500 students attending middle and high schools in the USA. The majority of the students were from economically deprived backgrounds. In their model, students whose parents discussed school-related topics with them spent more time on homework and held more positive attitudes to school. Both these measures were, in turn, positively associated with students' class grades (as reported by the students themselves). The second study by Keith *et al.* (1993) drew on a large-scale dataset of over 21,000 eighth grade students (equivalent to Year 9). Their model included measures of parental interest in school and parents' educational aspirations for their child. The researchers found that these aspects of parental involvement were more highly associated with student achievement than was socio-economic status, leading the researchers to suggest that this could be

one of the reasons why pupils from economically advantaged families achieve more highly at school. The model also showed a strong relationship between these aspects of parental 'interest' and the amount of time students spent on homework.

8.4 Parental involvement with reading

There is a considerable body of research into parental involvement in young children's reading, including studies using an experimental design. Much of the research has focused on pupils in areas of social deprivation, with a history of poor literacy levels. The research has yielded somewhat contradictory results for reading initiatives focusing on parental involvement (a mixture of no effects and significant positive effects). It seems that simply encouraging parents to get involved is not sufficient to promote success in reading. On the other hand these studies raise the possibility that encouraging parents to use particular strategies could be the distinguishing feature of the more successful initiatives, such as the Haringey project and family literacy schemes (Brooks *et al.*, 1996; Hewison, 1988; Macleod, 1995; Jones and Rowley, 1990; Toomey, 1993; Topping and Lindsay, 1991; Topping and Wolfendale, 1995).

8.5 Summary of main findings from recent research into parental involvement in homework

The research on parental involvement in children's homework shows:

■ Parents are generally supportive of schools setting homework, although homework can cause conflict between parents and children.

■ Parents are more directly involved in homework when their children are younger.

■ The degree and type of parental involvement in homework is related to cultural and socio-economic factors.

- Research does not indicate a clear relationship between the amount of parental involvement in homework and pupils' achievement at school.

- The results of one intervention study suggest that teachers can increase parental involvement by setting particular types of homework tasks, but that this did not have a significant impact on pupils' test scores.

- Parental involvement takes different forms, and these appear to have different relationships with pupil achievement. It is possible for parents to intervene in either appropriate or inappropriate ways.

- Research into specific reading initiatives indicates that parental involvement is not sufficient for success. Again, the type of involvement may be the important factor.

9. THE HOMEWORK ENVIRONMENT

The review has enabled us to address six main questions about the environment in which pupils complete homework.

What is the relationship between doing homework and other activities?

How do parents influence the homework environment, and with what effect on pupil achievement?

What is the impact of access to space and resources?

Does watching television interfere with homework?

Do individual pupils prefer different types of homework environment?

What is the contribution of homework centres?

In focusing on the environment in which young people complete their homework, we are invited to consider a range of issues, including the competing demands on pupils' time, the availability of space and learning resources in the home, parental intervention in the homework environment, pupil homework preferences, and the provision of homework facilities outside the home. Therefore, issues considered here overlap with those considered in other sections, particularly those on the relationship between homework time and achievement, and parental involvement.

9.1 Homework and other activities after school

As many commentators have said, homework is one of the most obvious ways in which school work impinges on the home. In order to complete their homework, pupils must decide when and where to

do so, and make choices about which of their 'leisure-time' activities should take precedence.

Black (1990) pointed out that there is a conflict between time spent on homework and other commitments, such as social events, extra-curricular activities and, for older students, employment opportunities. The research would seem to suggest that the time pupils spend on a range of learning activities (such as reading and extra-curricular clubs) correlates with positive attitudes and achievement (see Sharp *et al.*, 1998). This was also the conclusion of a subsequent study by Cooper and his colleagues (Cooper *et al.*, 1999). The study investigated the relationship between five after-school activities and academic achievement. In a survey of over 400 secondary students, those who spent more time on extra-curricular learning activities and less time watching TV or in employment achieved significantly higher test scores and better teacher-assigned class grades. Also, more time spent on homework was associated with higher class grades. These relationships held, even after controlling for the effects of background factors, such as gender, ethnicity, age and eligibility for free school meals.

9.2 Parental influences on the homework environment

Pupils' choices about their homework environment are influenced by their parents' preferences as well by as the availability of space and resources in the home. Marjoribanks (1994) identified three dimensions of the learning environment that contribute to school achievement: social capital (the quality of interaction among people); intellectual capital (the academic orientation of people) and economic capital (the availability of financial resources).

Parents can intervene by making rules about when and where their children complete homework. For example, parents may ensure that their children give preference to homework over other activities, place limits on TV viewing and check that their children have completed their homework tasks. This type of influence on the home environment has been labelled by Cooper *et al.* (2000) as the 'elimination of distractions' and by Keith *et al.* (1993) as 'the amount of structure in the home'. Their studies found that this kind of parental influence was not related to other aspects of parental involvement, such as

support for autonomy and direct involvement in homework tasks (in the case of Cooper *et al.*, 2000) or parental involvement in school activities and discussion with children about school work (in the case of Keith *et al.*, 1993).

There is little evidence that this type of parental influence on homework has a direct influence on pupils' achievement or attitudes, but Keith *et al.* (1993) argue that there could be an indirect effect, via time spent on homework.

9.3 Space, equipment, television and homework

Several research studies have considered different aspects of the physical environment for homework, including the location (bedroom or family room), equipment (desk/table and chair) learning resources (e.g. books, encyclopaedia); and the presence of television.

In a survey of school books in 28 English and Welsh secondary schools, Johnson (1999) found that 18 per cent of responding pupils said they had insufficient books at home to support their learning.

International studies of achievement in mathematics and science have shown that, in most countries, students who had a desk, dictionary and computer at home tended to achieve higher test scores (Martin *et al.*, 1997; Mullis *et al.*, 1997). Yet we are again faced with the problem of interpreting the results from correlational studies. Are the resources important in themselves, or are they a reflection of the family's economic and intellectual capital (which may be the primary influences on academic achievement)?

Several researchers have investigated the relationship between time spent watching television, time on homework and achievement at school. These studies have yielded a mixture of results. For example, Epstein (1988) reported no significant negative correlation between elementary children's hours of TV viewing and mathematics test scores, whereas Cooper *et al.* (1999) found a significant negative association between time spent watching the TV and (mainly secondary-age) students' test scores in mathematics and English. Keith and his colleagues (Keith *et al.*, 1993) found evidence of an indirect relationship between TV viewing and achievement. Secondary

students who spent more time on homework spent less time watching TV, and time on homework was related to test scores (TV viewing and test scores were not directly correlated with one another, once time on homework was taken into account).

Other studies have pointed out that TV viewing and homework are not necessarily separate activities. Some pupils either choose to work in the presence of television, or are forced to do so because of a lack of a private space in which to work (MacBeath and Turner, 1990; Wober, 1992).

9.4 Individual learning styles

One of the aspects of homework that has achieved some recent attention from researchers is young people's 'homework style'. This relates to aspects of the environment (such as noise level, working alone or with others, time of day) as well as to their mode of learning (visual, aural, practical etc.). The evidence suggests that individual pupils have distinct preferences for different learning environments (Hong and Milgram, 1999; Perkins and Milgram, 1996). These individual preferences are related to culture, and to some extent to gender. For example, Hong and Milgram (1999) found that US secondary students preferred more informal conditions for homework, including: background music; refreshments; learning with adults present and auditory learning. In contrast, students in Korea preferred more formal conditions, including bright illumination, a desk and chair; and visual tasks. There were a few gender-related differences: male students preferred tasks involving practical experimentation and liked to be more parent-motivated than was true of female students.

Researchers have pointed out that there may be a conflict between pupils' homework preferences and the views of teachers and parents about the ideal environment for study. For example, two pieces of research by MacBeath (MacBeath, 1996; MacBeath and Turner, 1990) found that some pupils' preferences were in direct contradiction to their teachers' advice. These included playing loud music while doing homework and the fact that some pupils did not wish to establish a set time for doing homework each evening because they preferred to schedule their homework in relation to television viewing. Hong and Milgram (1999) point to differences between pupils' preferred and actual homework style, suggesting that pupils cannot always work in the way that they prefer because of physical constraints and parental

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views. They go on to suggest that parents should identify their children's preferences and help them to adapt the environment to suit their learning style (Hong and Milgram, 1999; Perkins and Milgram, 1996).

The idea that adapting homework to suit individual learning style could assist learning was the focus of an intervention study in one US secondary school (Geiser, 1999). The research found that, in comparison with students who were given 'traditional' advice on studying, students provided with specific homework advice based on their individual learning style performed better in tests of mathematics, had more positive attitudes and kept up a good record of homework completion. The evidence from this study suggests that there could be merit in helping pupils to identify their learning style, and adapting their homework environment to suit their style.

9.5 Homework centres

Although most homework is completed at home, there has been a recent expansion in homework centres established in schools and public libraries. The government has committed National Lottery money to fund an expansion of study support opportunities, including homework centres and clubs. Unfortunately, although a number of evaluation studies are currently under way, there are few published findings available regarding the value of these centres.

However, there is some research evidence on the value of homework centres. For example, a mainly qualitative evaluation study by MacBeath (1993) identified a range of benefits of homework centres. The schools in this study all served deprived populations in Strathclyde, and the intention of the initiative was to provide students with a supportive environment that may be lacking at home. As well as providing access to learning resources, the homework centres created a social environment, focused on learning, in which pupils could benefit from working with other pupils and teachers. Parents, heads and teachers had positive views about the value of the homework clubs in helping pupils' learning. Participating pupils felt that the centres had made homework more enjoyable, and had given them a better chance of passing their exams. Similarly, the results of case-study visits to homework clubs established in public libraries (Train *et al.*, 2000) indicated that pupils, teachers and parents felt the centres provided a valuable resource.

9.6 Summary of main findings from recent research into the homework environment

The research on the homework environment indicates:

- Pupils who spend time on a range of after-school learning activities (such as reading, homework and extra-curricular clubs) perform better at school.

- Parents can exert an influence on the homework environment, through encouraging their children to complete homework and creating appropriate conditions for learning. By intervening in this way, parents encourage children to spend more time on homework, which may, in turn, be associated with achievement at school.

- Although neither extensive, nor entirely consistent, the research evidence suggests that more time spent viewing television is associated with less time spent on homework, and that this may have an indirect effect on achievement at school. Some pupils complete their homework in the presence of television.

- Pupils like to learn in different ways. There is evidence that pupils have individual 'homework styles', which relate to aspects of the environment and mode of learning. These preferences vary in relation to cultural and gender differences.

- Pupils' learning styles may be at odds with those suggested by teachers and parents.

- The results from one intervention study found that secondary pupils learned better when they were given homework advice related to their individual learning style.

- There are a limited number of completed research studies concerning the impact of organised homework clubs on pupil outcomes. However, initial evidence suggests that these clubs offer both access to learning resources and a social environment that is conducive to study. Homework clubs may be particularly valuable in areas of social deprivation, to compensate for a lack of resources in the home.

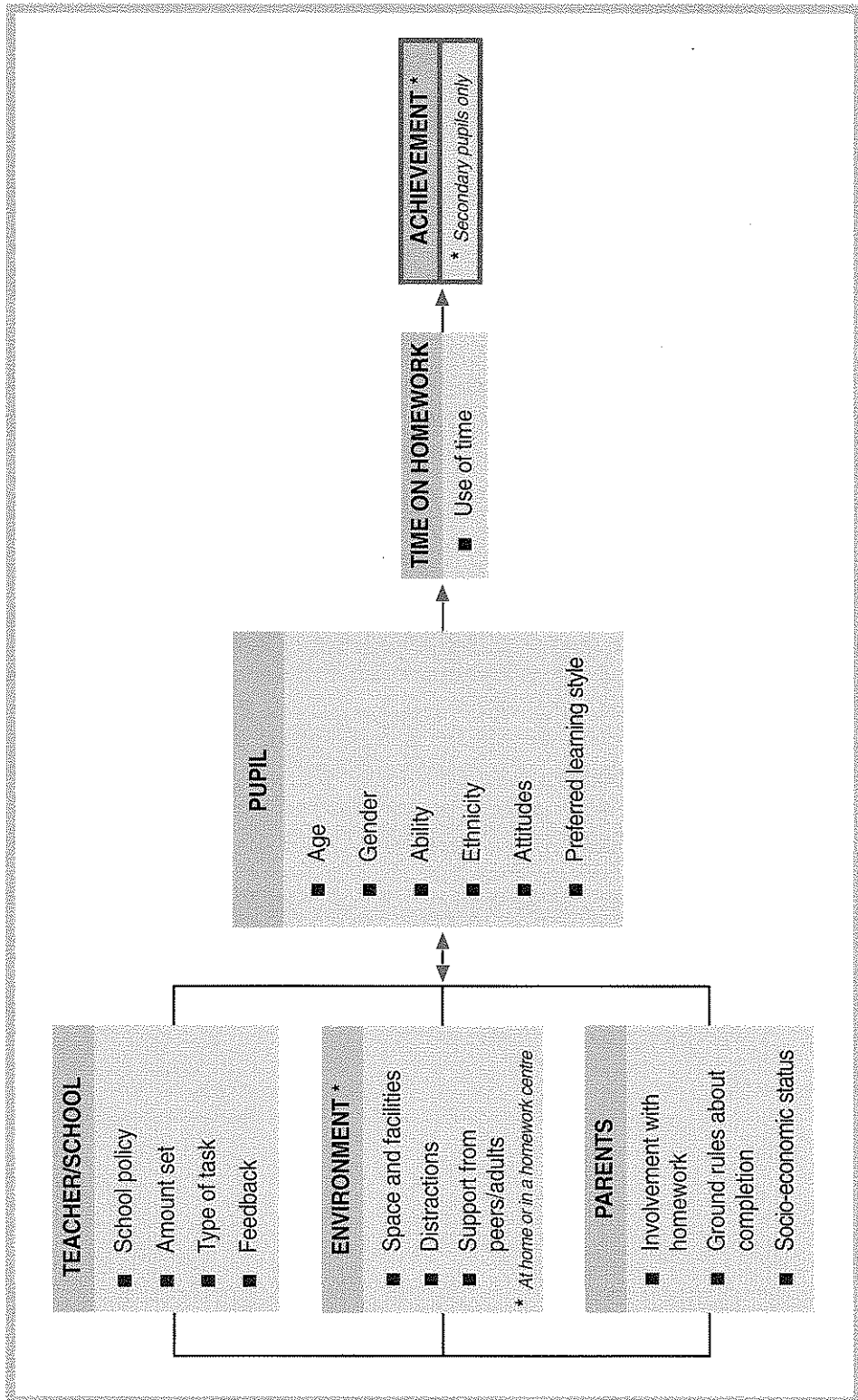# 10. FINDINGS FROM RESEARCH INTO HOMEWORK: A MODEL

The findings from recent research into homework can be represented in a model. As this overview has shown, there is much more evidence on some issues than others, and research findings are sometimes conflicting. The model places emphasis on the key research findings (only the major relationships are shown, to avoid too many intersecting arrows confusing the picture).

The model shows three areas of influence on pupils' homework behaviour investigated by research, namely: the school and teachers; the homework environment; and parents. These are themselves inter-related (for example, school policy and the type of homework task can influence the level of parental involvement, and parents' economic resources and preferences have a strong influence on the environment for study at home). Obviously, schools have the most direct impact on the homework environment where there is a school homework or study support centre, but they may also affect the environment at home by offering advice to pupils and parents.

All three areas (teacher/school, environment and parents) influence the pupil's homework behaviour. This is also affected by pupil characteristics, such as age and gender, as well as their attitudes towards homework and their preferred learning style. The double-headed arrow shows that pupil characteristics and attributes also interact with aspects of the environment, parents and the homework set by the teacher/school.

The factors in the 'pupil' box influence the time each pupil spends on homework (as do other factors, such as the amount of homework set, parental expectations, and the environment). Much of the recent research has focused on the relationship between homework time and academic achievement. The evidence shows that time spent by pupils on homework does influence achievement, although to a relatively modest extent. The link between homework time and achievement applies to secondary pupils only: it has not been established for pupils of primary school age.

Figure 5. Research findings on homework

ACHIEVEMENT *

* *Secondary pupils only*

TIME ON HOMEWORK
- Use of time

PUPIL
- Age
- Gender
- Ability
- Ethnicity
- Attitudes
- Preferred learning style

TEACHER/SCHOOL
- School policy
- Amount set
- Type of task
- Feedback

ENVIRONMENT *
- Space and facilities
- Distractions
- Support from peers/adults

* *At home or in a homework centre*

PARENTS
- Involvement with homework
- Ground rules about completion
- Socio-economic status

11. THE NEED FOR FURTHER RESEARCH

This review has identified a body of information on homework policy and practice. The quality of the studies varies considerably, from those with serious weaknesses (and those which simply lacked information about samples, methods and analysis) to some high-quality pieces of research.

The review has identified a need for more information on particular topics of interest. For example, we were unable to identify any published research into the impact of home–school contracts on homework. Similarly, we were unable to locate many studies that considered the impact of different types of homework on teachers. Several writers have recommended that schools should develop comprehensive homework policies, set up homework clubs and study-support centres, or provide advice and training for parents. However, with a few notable exceptions, relatively little is known about the range of models available to schools, or the potential efficacy of specific strategies for the teachers, pupils, parents and others involved.

It is striking that there is so little recent research into homework in this country. Given the introduction of national guidance on homework policy, there is an urgent need for more research into homework, particularly at primary level. The priorities for research identified in this review are highlighted below.

PRIORITIES

■ Research into the costs and benefits of homework for pupils, parents and teachers (for example, time commitments involved in different tasks, including preparation and marking).

■ Studies using an experimental design to assess the effectiveness of different homework interventions, such as homework designed to encourage specific kinds of parental involvement, different types of homework tasks, different approaches to marking and feedback.

■ Studies focusing on the application of new technology in relation to homework.

■ Research into the impact of homework on pupil attitudes as well as pupil attainment.

■ Research aimed at identifying effective homework practices for lower-achieving pupils and pupils with special educational needs.

■ Studies focusing on the impact of the homework environment in relation to individual learning styles.

■ Studies considering the relationship between homework and the development of self-regulated learning.

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APPENDIX: METHODOLOGY FOR THE REVIEW

A1   Inclusion/exclusion criteria

The review comprises research-based literature, most of which has been published. Practice descriptions and opinion pieces were excluded from consideration, although we did decide to include one or two pieces in which authors were discussing the implications of results from particular pieces of research.

The review focused on school-related homework for pupils of school age. The searches identified some studies of 'homework' designed to achieve behavioural objectives for children with special educational needs: these were excluded from consideration. In relation to parental involvement, we included studies with a direct bearing on parental involvement in homework and home reading schemes, or those which dealt with parental influence on the conditions for learning in the home. Literature dealing with more general aspects of parental involvement was not included in the review.

There were two main reasons for rejecting individual pieces of literature:

- the material was not considered pertinent to the interests of the review;

- on close examination, the research was considered unreliable (e.g. due to serious flaws in the study design and execution; insufficient information on which to judge the quality of the research findings; small sample size for intervention studies).

Target population

The review covers both primary and secondary phases of education.

Time and place

The review covers English-language material published/produced between January 1988 and December 2000. It also includes a few reviews and Ofsted reports published immediately prior to 1988. Research published in English and undertaken in the UK, the rest of Europe, the USA, Canada and Australia is included.

A2 Search strategies

As the primary method of identifying published literature for this review, staff at the NFER Library searched a range of different educational, sociological and psychological databases. These were: ASSIA (Applied Social Sciences Index and Abstracts); ChildData (four databases of publications on the education, health and welfare of children); British Education Index; Australian Education Index; CBCA fulltext (covering Canada); ERIC (Educational Resources Information Centre database); and PsycLIT.

The NFER's Library's own internal databases were also searched, along with various Government Internet sites.

Library searches using databases

A record of the searches carried out on the various databases has been documented and is outlined below.

AEI
#1 Homework
#2 Home Study
#3 Family School Relationship
#4 Non Formal Education
#5 Reading Schemes

ASSIANET
#1 Homework
#2 Home School Relationships

BEI

#1 Homework
#2 Home School Relationship
#3 Parent School Relationship **NOT** Home School Relationship
#4 Home Study
#5 Home Programmes
#6 Homework Clubs (free-text)
#7 Home Reading Schemes (free-text)
#8 Home School Compacts (free-text)
#9 Out of School Care (free-text)
#10 Reading Schemes

CBCA

#1 Homework

CHILDDATA

#1 Homework
#2 Out of School Care
#3 After School Care
#4 Kids Clubs
#5 Extended Day

ERIC

#1 Homework
#2 Home Study
#3 After School Education **OR** After School Programs **OR** After School Centres **NOT** Homework
#4 Family School Relationship **AND** Primary Education

PSYCLIT

#1 Homework

In order to check on the body of research published in the years before 1988, NFER librarians examined all issues of the journal *Review of Educational Research* published since 1982. This journal is published in the USA and contains 'state of the art' reviews of the educational literature. (Although it is indexed on the ERIC database, all issues were searched manually as a double check.)

After conducting the initial searches in 1997, it became apparent that, while certain areas of interest were well researched, there was much less material available on other aspects. In particular, there was a lack of research information in three of the areas identified by Ofsted:

- impact on parents (especially home–school compacts/contracts, home study facilities and support from schools on how to help their children);

- alternative facilities (homework clubs, public libraries);

- resources for homework (access to books and other learning materials).

At an initial stage, it was impossible to know for certain whether there was really very little research evidence available in these areas, or whether the searches had simply failed to identify relevant research. The NFER library therefore conducted further database searches using new keywords, and contacted key organisations and individuals.

In an attempt to identify further information on the issue of facilities and resources for homework in the home, the following sources of statistical information were searched: The *General Household Survey*; *Social Trends*; the *Annual Abstract of Statistics*; *Social Focus on Children*; and the *1991 Census*. Unfortunately, no relevant information was discovered.

The NFER library contacted the following organisations, seeking information on children's access to books: *The Children's Literature Research Centre*; *Book Marketing Ltd.*; *Book Track*; and *Book Watch*. One relevant publication was identified as a result of these contacts. Contact was also made with the *Library Association*, seeking research information on facilities for homework in public libraries. Unfortunately, at the time no research studies on this subject were identified, although two have subsequently been published and were included in the review.

In an attempt to identify additional information on study support/ homework centres, NFER librarians contacted the *Prince's Trust*. As part of the updating process in 2000, personal contacts were also made with some of the leading researchers into homework in the USA (namely, Harris Cooper, Lyn Corno and Joyce Epstein), which resulted in the identification of several relevant studies.

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HOMEWORK
a review of recent research

In 1998, the Department for Education and Employment published guidance for schools regarding homework policy and practice. This thorough and wide-ranging review focuses on the best available evidence from recent research in an attempt to answer some fundamental questions about homework. It considers research into time on homework and achievement; homework and pupil attitudes; parental involvement and influence; and key aspects of the homework environment.