

MEASURING SECONDARY TEACHERS' VIEWS OF HOMEWORK

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ABSTRACT

Homework is a school tradition such that teaching/learning models of schooling which ignore homework are incomplete. Factor and reliability analyses were used to develop four scales measuring different aspects of teachers' views about homework, at both the junior and senior secondary levels. The successful scales were concerned with the importance of the following: Outcomes of homework, Structure of homework, Feedback to students, and Parental involvement. Although not strong, teacher responses were positive to all four aspects with the clearest support for the importance of Outcomes of homework. School and teacher characteristics and teaching contexts were associated with some attitudes.

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Introduction

For as long as children have attended school, teachers have assigned and marked, parents have nagged and encouraged and students have grumbled about homework. Homework has become part of the fabric of education and has received official support (see, for example, NSW Department of Education, 1987). Along with school uniforms, blackboards, report cards, textbooks and detention, it has become a tradition, an accepted reality, surviving periods of denunciation and disfavour as well as waves of enthusiasm and approval. Administrators tend to see homework as a means of improving

test scores, parents regard homework as proof that schools are doing their job and as a means to improving marks and career opportunities, teachers see it as a way extending the school day and fostering responsibility in their students and, when pressed, even students accept that homework does contribute to academic success (Fairbairn, 1993).

Not only is homework an accepted part of schooling, it is an increasingly important component of the learning process as teachers and students are pressed into placing greater reliance on out-of-class learning. Particularly in the senior secondary years, demanding curricula, highly competitive examinations, emphasis on independent assignments and assessment tasks, and an array of extra curricular activities mean that greater demands are put on students' in-school time. The consequence is an overflow of school work into out-of-school hours. Clearly the setting of homework is a way of increasing student time-on-task, one of the most potent correlates of school achievement (Centra & Potter, 1980, p.285; Bloom, 1980, p.383). In a recent study of reading literacy of 14 year-old students in 33 countries, the frequency of setting homework was the third most important variable distinguishing between high and low achieving countries, after statistical adjustments had been made for social and economic indicators in the countries involved (Elley, 1992, p.47).

The above suggests that considerations of student learning should have a focus wider than that of classroom activities, and at least should include homework. Unfortunately it would seem that much of the research on homework is far from adequate. Research into homework has been described as

"vague, uncertain, contradictory" (England & Flatley, 1985, p.21, but see also Coulter, 1980; Rickards, 1982; Parkhurst, 1989; and Cooper, 1989). Overall it would seem that the impact of research in forming and/or informing the attitudes of teachers, parents and administrators has been minimal. There appears to be a large discrepancy between recommended homework practices and those actually employed by teachers. No doubt one of the reasons for this is the inconclusive and contradictory nature of results obtained from much of the research. Another reason is that, with much of the reported research, homework was simply one of many variables in a larger study with quite a different focus (for example, see Anderson, 1986). Because of the lack of specific interest in homework in these studies, single item self-report measures of homework practices and global measures of time spent on homework have been used. Such inadequate measures of homework would have contributed to some of the uncertainty in results.

Definition of Homework

A serious problem identified with research into homework is the lack of a commonly-accepted definition of homework (Knorr, 1981, cited in England & Flatley, 1985). Researchers have not always made explicit what they have defined as homework for the purposes of their studies. If homework were implicitly defined as including all test and examination study, private study and tutorials, results of research would be expected to differ from studies where only specifically set practice, revision and extension exercises were defined as homework.

Studies which have provided definitions of homework are also disparate. Definitions range from the simple "work sent home" (McDermott et al, 1984, p.391) to detailed definitions such as "the time students spend outside the classroom in assigned

activities to practice, reinforce or apply newly acquired skills and knowledge and to learn necessary skills of independent study" (Butler, 1987, p.17). While Butler clearly spelled out the purposes of homework, he still failed to clarify what types of activities were included. Did homework include work done in free periods, and did it include private study and study for tests and examinations? It is important that the activities, as well as the purposes of homework be made clear.

In the study reported here, homework has been defined as:

Tasks assigned to students by teachers that are meant to be carried out during non-school hours:

long and short-term assignments and projects are included, while studying for quizzes, tests and examinations and self-assigned private study and private tutorials are excluded.

Private study and study for quizzes, etc, have been excluded because they are frequently not specifically assigned by teachers, and because they can be seen as fundamentally different to the fixed tasks generally set for homework, from both student and teacher perspectives. For this study the focus is on teacher perspectives of homework: specifically the importance of the outcomes, structure, purposes, feedback and parental involvement related to homework.

Teacher Attitudes to Homework

The importance of teacher attitudes generally for teaching and learning has been stressed by several writers, at least since the 1970s (see, for example, Rosenshine, 1976; Zahorik, 1984; and Yonemura, 1986). An implication of this work is that teachers' attitudes towards homework should also be considered as important for the place of homework in the overall pattern of school education and its ultimate success. Do teachers see homework as having educational value or do they set homework because it is expected of them by the school, parents and students? Do teachers believe homework should be tailored to meet individual student needs or is it really only useful for slow students to catch up on work they were unable to do in class? How much effort should be put into planning homework and do teachers think homework should be marked? Answers to questions of this type clearly will influence teachers' and subsequently students' homework practices.

In this study, five aspects of teachers' attitudes towards homework were used as a basis for developing scales to measure the attitudes reliably. Teachers' views of the importance of the following were examined.

Homework Outcomes such as improving academic achievement, and less direct outcomes through an impact on motivation and study habits

Structure of homework including how it is planned, explained, and is made to become part of the learning process

Reasons and purposes for setting homework, whether because of its educational value or otherwise

Providing Feedback to students on their homework by

checking, marking and commenting on it

Parental involvement in the completion and process of doing homework

Homework Outcomes. There would seem to be almost universal agreement among teachers that homework is related to greater academic success (see, for example, Cooper, 1989, p.161; Parkhurst, 1989; Anderson, 1986; Reddick & Peach, 1984; and an Australian study by Coulter, 1980). A meta-analysis of 16 studies by Cooper (1989) indicated that, not only was school performance enhanced by students doing homework, the effectiveness of homework increased with higher year levels. Social Science achievement showed the largest gains, Mathematics the least. Some of the other student outcomes found to be related to homework include attitudes towards school subjects (Keeves, 1972; Beresford & Tobin, 1988), student responsibility for learning (Sullivan, 1988), and developing self-discipline and independence (Etzioni, 1983, cited in Strother, 1985; Parkhurst, 1989). Warnings have been expressed that unless students have strategies for independent learning and are motivated (Delucchi et al, 1987) and possess specific skills needed (Toomey, 1985, p.7), homework time may be largely wasted.

Structure of Homework. It has been claimed that assignments need to be well planned and designed for homework to be effective for student achievement (Lee & Pruitt, 1979). It has also been stated to be important that homework be seen to be meaningful to students (see, for example, Strother, 1985), to motivate students (Halstead & Riden, 1982), or to share responsibility for learning with students (Porter & Brophy, 1988). Clarifying assigned homework for students was found to be important by Lee and Pruitt (1979) because even good students had difficulties when teachers did not provide adequate directions. The individualisation of homework has been supported by many commentators, although there is little evidence of this practice existing or of any relationship that individualisation may have with homework effectiveness. Of course even the same homework tasks become distinctive for different students in terms of difficulty and consequently time taken to complete (Coulter, 1989). The impracticality of teachers setting discrete and appropriate homework tasks for individual students was recognised by England and Flatley (1985), although challenged by Keith et al (1986) who considered it possible to vary assignments to meet individual needs from time to time. Student involvement in deciding the

amount and content of homework has also been suggested because this practice should encourage greater student commitment to homework. Coordination between teachers when setting homework is another aspect of structuring which has been seen as desirable by many commentators (see, for example, Check, 1966; Halstead & Riden, 1982).

Reasons and Purposes for Homework. It has been suggested that, when setting homework, teachers seem to be guided more by tradition than by any well-developed rationale or policy (Rutherford, 1989). Many teachers feel an expectation pressing on them from schools, parents and students, even in situations where schools do not have a formal homework policy. Apart from other considerations, homework provides a vehicle for communication between school and home, both formal and informal. Improving achievement scores (Rutherford, 1989) and completing work begun in class (Hill et al, 1986) are two reasons for setting homework that have already been mentioned. An over-full curriculum and the competitive nature of schooling, especially in the upper secondary school, have also

been used as related reasons for homework (Coulter, 1980). One reason which is used for giving homework, and which it has been argued should not be used, is homework as punishment or as a disciplinary procedure (see, for example, Check & Zeibel, 1980, p.440). Although almost all teachers would stress the learning purposes of homework, the reasons for homework mentioned thus far are non-educational. A useful educational taxonomy of homework purposes was suggested by Lee and Pruitt (1979), as adapted below.

- * Mastering specific skills (practice)
- * Orienting students for subsequent lessons (preparation)
- * Transferring skills or concepts to a new situation (extension)
- * Integration of skills and concepts (creative)

Practice and consolidation homework has been found to predominate in schools (Rutherford, 1989), although the importance of the other purposes has been recognised (Hill et al, 1986). Little difference in relationships between the various purposes of homework and achievement has been identified, although it has been suggested that further work of this type is needed in subject areas other than mathematics (Fairbairn, 1993).

Homework Feedback. There has been widespread agreement that monitoring of student learning and feedback of information to students is desirable, and indeed essential for quality education (McGaw et al, 1991; Walberg, 1984). This finding applies equally to school work and to homework and, it is claimed, the sooner feedback is received the more effective it is (Halstead & Riden, 1982, p.26). The quality of feedback is important, with good feedback giving information on how well content was understood, and providing sufficient details to allow students to correct their own errors (Kulhavy, 1977, cited in Bennett, 1978). Unfortunately it has been suggested that this type of feedback is rare, with simple correction in the form of ticks and crosses being more common (Fairbairn, 1993, p.29). However, conclusions on the relative efficacy of frequency and type of feedback are mixed (Cooper, 1989, pp.171-172). Certainly students can be concerned when homework is not checked (Coulter, 1980, p.90), and teachers normally agree that homework should be checked (see, for example, Parkhurst, 1989), However, in another study in which teachers otherwise indicated to students that they valued homework, relatively few regularly checked it (Tamir, 1985). Of course a questionnaire measures teachers' stated beliefs, not necessarily their practices when time is constrained.

Parental Involvement in Homework. Since the Coleman Report (1966, cited in McDermott et al, 1984, p.409), numerous studies have acknowledged the importance of the home environment in determining students' educational outcomes. Among many other findings, a common result of such studies was to find significant correlations between home environment measures and time-on-homework (see, for example, Walberg et al, 1986; Natriello & McDill, 1986; Horn & Walberg, 1984; Keith, 1982). One conflicting result arose from the Australian study by Cooper (1980) in which no relationship was found between socioeconomic status of the home and time-on-homework. However, extremes of socioeconomic status were not present in Cooper's study. Changing circumstances in the home in the 1990s perhaps make many of the earlier findings

irrelevant today. Single parent families, working mothers at all socioeconomic levels, and secondary school students with regular after school employment are some of the factors likely to be related to a parental and circumstantial press on students and consequently to homework practices. When considering parental involvement in homework, it is also necessary to distinguish between parental interest and parents assisting with or even engaging in the homework tasks themselves. Parkhurst (1989) found that 85 per cent of parents stated that, for their junior secondary aged children,

they encouraged as needed, and 73 per cent assisted directly. Very few parents thought that assistance should not be given and, in an earlier study (Check, 1966), very few had rejected homework outright. Clearly teachers should consider the issue of parental involvement in homework, and endeavour to establish and maintain effective communication with parents about homework policies, expectations and degree of involvement (Fairbairn, 1993, p.39).

Design of the Study

The major aims of this study were to develop and refine a set of scales to measure teachers' attitudes to homework and to determine if these attitudes were related to teacher background variables such as age and training, and to teaching context factors such as position in the school, subject taught, and junior and senior classes. The first requirement was to develop a teacher questionnaire to assess the five aspects of teacher attitudes identified for junior and senior classes separately.

The questionnaire finally used consisted of 50 items, each designed to assess teachers' views of one of the five aspects of homework identified. Items were developed from previous research, policy documents, and suggestions from teachers. A large pool of items was put together initially and refined through discussions with teachers and others. A random sample of 21 secondary schools in the Hunter Region of NSW were invited to participate in the study, and 12 of these schools agreed. Responses from 205 teachers (31 per cent) at the 12 schools (six urban and six rural) were received, coded and analysed. The relatively low proportion of responses received will limit any generalisations made from the study and is perhaps indicative of secondary teachers' relative lack of interest in the topic of homework.

Responses to the 50 questionnaire items were factor analysed to ensure that each item was a valid measure of one aspect of homework in that it loaded on only the scale intended, and the alpha reliability of each scale was calculated. Junior and senior responses were analysed separately. For the initial factor analyses a minimum ratio of responses to items of 3.5:1 was considered acceptable (Tatsuoka, 1970), and this ratio increased considerably as inappropriate items were removed. An item was removed if it loaded on an inappropriate scale or on more than one scale (indicative factor loadings of 0.3 were used), or if it was reducing the reliability of the intended scale. As a result of this process one scale, Reasons, had to be abandoned because items intended to measure this aspect of homework loaded on other scales, particularly the Outcomes

Table 1. Teacher Attitudes to Homework: Junior Classes.
Factor Matrix with Oblique Rotation.
(Only factor loadings greater than 0.3 are shown.)

ITEM/SCALE	O'COME	STRUCT	F'BACK	PARENT
Homework ...				
Undermines motivation	.58			
Values independent learning	.61			
Establishes research skills	.66			
Establishes study routines	.71			
Enhances learning	.86			
Improves academic performance	.78			
Encourages using other resources	.65			
Develops indep. problem solving	.61			
Promotes self-discipline	.59			
Homework ...				
Should be co-ordinated		.62		
Improves achieve. when negotiated		.74		
Should be rel. to class learning		.50		
Improves achieve.if stud.set goals		.62		
Should consider home conditions		.57		
Homework ...				
Evaluation should be fed back			.50	
Useful if checked for accuracy			.67	
Should be checked but not marked			.70	
Should always be marked			.77	
Evaluation is not important			.67	
Parents should ...				
Not get involved in HW at all				.70
Not be involved in HW decisions				.61
Provide only moral support				.80
Assist with HW when asked				.49
PERCENT OF VARIANCE	21.8	10.6	7.9	7.3
EIGENVALUE	5.0	2.4	1.8	1.7
SCALE RELIABILITY	0.86	0.63	0.70	0.60
SCALE MEAN (Neutral = 3.5)	4.88	4.21	4.39	4.27
SCALE STANDARD DEVIATION	0.62	0.72	0.74	0.80

scale. While it cannot be concluded from this result that teachers did not consider Reasons for setting homework to be important, they did not, in general, discriminate between reasons for setting homework and the importance of intended homework outcomes. The factor loadings also indicated that the Reasons for setting homework did not form a unidimensional scale, and that academic and non-academic reasons for setting homework probably should be separated in Table 2. Teacher Attitudes to Homework: Senior Classes. Factor Matrix with Oblique Rotation. An asterisk indicates an item not on the final Junior scale.
(Only factor loadings greater than 0.3 are shown.)

ITEM/SCALE	O'COME	STRUCT	F'BACK	PARENT
Homework ...				
Undermines motivation	.54			
Values independent learning	.59			
Establishes research skills	.58			
* Fosters responsib. for learning	.54			
Establishes study routines	.64			
Enhances learning	.82			
Improves academic performance	.72			
Encourages using other resources	.68			
Develops indep. problem solving	.69			
* Does not improve achievement	.57			
Promotes self-discipline	.70			
Homework ...				
Should be co-ordinated	.53			
* Should be carefully planned	.37	.31		
* Should be clearly explained	.39			
Improves achieve. when negotiated	.77			
Should be rel. to class learning	.41			
Improves achieve.if stud.set goals	.49			
Should consider home conditions	.63			
Homework ...				
Evaluation should be fed back	.45			
Useful if checked foe accuracy	.63			
* Checking shows teachers care	.40			
Should be checked but not marked	.74			
Should always be marked	.74			
Evaluation is not important	.68			
* Should be included in assessment	.31			
Parents should ...				

Not get involved in HW at all	.78
Not be involved in HW decisions	.65
Provide only moral support	.84
Assist with HW when asked	.49

PERCENT OF VARIANCE	19.0	10.4	6.5	8.0
EIGENVALUE	5.5	3.0	1.9	2.3
SCALE RELIABILITY	0.86	0.66	0.71	0.70

SCALE MEAN (Neutral = 3.5)	5.06	4.45	4.22	3.91
SCALE STANDARD DEVIATION	0.55	0.64	0.75	1.01

any further scale development.

Finally, 23 items from the junior questionnaire and 29 items from the senior were found to load on the intended scale with a factor loading of at least 0.3, and to contribute to the reliability of the scale. For senior classes, one item also loaded on another scale but was retained because of its contribution to the reliability of the senior class Structure scale. Negative items were recoded and scale scores were developed by adding the appropriate items for each of the four scales at junior and senior levels: the importance for teachers of Outcomes, Structure, Feedback and Parent involvement in homework. Composition of the scales (using shortened forms of the items), item factor loadings, eigenvalues, reliabilities, and scale means and standard deviations are shown in Tables 1 and 2.

Summary of Scale Characteristics

Given that six response categories were used, a scale mean score of 3.5 would indicate that, overall, teachers were neither agreeing nor disagreeing that each dimension identified was an important aspect of homework. A mean of 4.0 would indicate a tendency to agree, 5.0 agreement, and 6.0 strong agreement. A target was to develop scales with reliabilities of at least 0.70. Reliability less than 0.70 severely limits the usefulness of a scale. The achieved

reliabilities of the scales varied, ranging from 0.60 to 0.86. The Structure scales for both junior and senior classes, and the Parents scale for junior classes, having reliabilities less than 0.70, are considered to require further development. Three of the other scales had reliabilities just over 0.70 and would also benefit from some refinement. The Outcomes scales

R2 (%) 4.6 3.9 7.7 14.8 8.9 14.2 5.2 18.2

Variables Linked with Attitudes to Homework

School, teacher and teaching context variables which have been linked with teachers' attitudes to homework, mentioned above, have been considered in some detail by Fairbairn (1993, pp.68-

72). Individual schools and the rural/urban location of schools were considered for possible relationships with attitudes to homework. Teacher characteristics included age, teaching experience (as these were highly correlated, age was omitted in favour of experience in subsequent multivariate analyses), gender, length of teacher education, subject trained (maths/science or other), and position in the school (assistant teacher or a position of responsibility). Teaching context included teaching load, subjects taught, and the teacher's assessment of the relative ability of the junior and senior classes they taught. These variables were entered into multiple regression equations with each of the homework scales at junior and senior levels as successive dependent variables. Variables found to have significant paths ($\text{prob.} < .05$) to each dependent variable in the presence of the other variables from this list are shown in Table 3. Because not all teachers had senior classes and there were missing responses to some items, the number of teachers involved in each of the analyses ranged from 118 to 152.

The most consistently important variable for teacher attitudes to homework was the gender of the teacher, particularly for senior classes. Female teachers more than males thought that Outcomes, Structure and Feedback were more important, although the reverse was true for the involvement of Parents with senior homework. More experienced teachers also thought that involvement of Parents was less important for senior classes, but that Feedback was more important for both junior and senior classes.

Teachers in positions of responsibility thought that the Structure and involvement of Parents associated with homework was more important than did teachers who were not in promotions positions. Those with lower teaching loads (who would also tend to be teachers in senior positions) also thought that Outcomes and Feedback were more important than teachers with higher teaching commitments.

Teachers at rural schools thought that homework Feedback for senior classes was more important than teachers at urban schools, while the reverse was true for homework Outcomes for junior students. Finally, mathematics and science teachers, compared with teachers of other subjects, thought that homework Feedback to senior classes was less important.

When other variables were taken into account, the individual school at which teachers taught was not related to homework attitudes. The length of teacher education undertaken and teachers views of the ability levels of their classes were also unrelated to these attitudes.

As only between three and 19 per cent of the variance in teacher attitudes to homework was explained by the school, teacher and context variables used, it would seem that other, unmeasured variables had a far greater impact on these attitudes. However, the effect of the variables was far from negligible, especially for three of the four scales for senior classes (Feedback, Structure and Parents) where between 14 and 19 per cent of the variance was explained.

Final Remarks

The teachers surveyed indicated they held positive, if not strong, attitudes to the importance of homework on all four dimensions assessed. The teachers recognised most strongly the importance of homework outcomes generally and the

importance of homework for senior classes on all dimensions except the parental involvement scale. Gender, seniority and experience of teachers were the variables most commonly related to the importance teachers accorded to the four aspects of homework assessed.

School homework policies must take teacher attitudes into consideration, and it seems that teachers are lukewarm towards the importance of structuring homework and providing feedback on their homework to students. Perhaps this is in part because structuring homework to maximise links with classroom learning and monitoring students' homework are time consuming. However, if research indicates that structuring homework and providing feedback from it to students are important for learning and for students' willingness to do homework, teachers should be aware of this. It may also be necessary to assist teachers with these aspects of homework, especially planning and structuring and the more valuable feedback practices.

The question of parental involvement in homework policy decisions and in the actual doing of homework by their children is one which the teachers in this study were most divided, particularly for senior secondary students. It has again been suggested recently that lack of communication between schools and parents, related to homework, creates problems (Donaghy, 1993). Parental support for teachers setting homework could be most valuable in ensuring appropriate conditions were provided for their children and in assisting teachers to ensure homework was done, particularly with junior secondary students. Greater parental involvement could be seen more as assisting, less as threatening. This was an exploratory study of teachers' attitudes towards homework for junior and senior secondary students. Although neglected in most research into teaching and learning, the ubiquitous nature of homework suggests it should be more often included as a variable in such studies. In this case, the small sample of schools used and the low response rate from teachers in those schools severely limit any generalisations from the study. However, the study would seem to indicate that it is possible to measure teachers attitudes to homework on at least four of the five dimensions identified from the literature. It has been suggested that the fifth dimension, Reasons and Purposes in setting homework, be split into two scales by dividing items into indicators of academic and non-academic reasons. Such scales would be important additions to the assessment of teachers' attitudes towards homework.

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