



REVIEW

July 2005

**A systematic review of what
pupils, aged 11–16, believe
impacts on their motivation to
learn in the classroom**

Review conducted by the Motivation Review Group

The EPPI-Centre is part of the Social Science Research Unit, Institute of Education, University of London

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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LIST OF ABBREVIATIONS

BERA	British Educational Research Association
DfES	Department for Education and Skills
EPPI-Centre	Evidence for Policy and Practice Information and Co-ordinating Centre, Social Science Research Unit, Institute of Education, University of London
LLT	Logical learning theory
RE	Religious Education
REEL	Research Evidence in Education Library
SCRE	Scottish Council for Research in Education
WoE	Weight of evidence

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SUMMARY

Background

A number of definitions of motivation currently exist. These have varying emphases and have largely emerged from theoretical considerations. There is evidence that how motivated or demotivated individuals feel affects their levels of engagement with a task, enjoyment of activities, how and what they learn, and, ultimately, their performance. Given that demotivation can lead to disaffection with, and even disengagement from, learning, what pupils themselves have to say about their motivation to learn is an important prerequisite for informing teaching practices in the classroom.

Review focus

Three major questions arose that guided the Review Group's work:

1. What factors impact on pupils' motivation to learn in the classroom?
2. Can teachers create conditions in the classroom that sustain, guide and enhance an inherent motivation to learn and how might they do this?
3. Is it possible for teachers to rekindle motivation in those who have become disaffected and/or disengaged from the formal learning process?

This first review focused on pupils' perceptions of factors that:

- impact positively or negatively on pupils' motivation to learn in the classroom
- occur both within and outwith the classroom
- are intrinsic or extrinsic to the individual

Review question

What do pupils, aged 11–16, believe impacts on their motivation to learn in the classroom?

Methods

Identification of potential studies: search strategy

Reports were identified from the following sources:

- Bibliographic databases
- Search of journal publishers' web pages or handsearching of key journals

Citation searches of key authors/papers
Reference lists of key authors/papers
References on key websites
Personal contacts
Direct requests to key informants

The Review Group used EndNote to keep track of, and code, studies found during the review.

Screening studies: applying inclusion and exclusion criteria

Titles and abstracts were imported and entered manually. The exclusion criteria were successively applied to (i) titles and abstracts, and (ii) full reports. We obtained full reports for those studies that appeared to meet the criteria or where we had insufficient information to be sure. These reports were entered into a second EndNote file and the exclusion criteria reapplied to the full reports. Those reports that did not meet these initial criteria were excluded.

The exclusion criteria were designed to eliminate the studies that did not directly relate to the review question. The exclusion criteria are as follows:

1. Does not involve pupils age 11–16.
2. Centres on pupils not educated in secondary schools (or their equivalent)
3. Does not report on primary research in which pupils were asked about their motivation to learn
4. Is not written in English
5. Does not contain details of research methods and study
6. Reports on data stated as being collected before 1998
7. Studies which did not report findings of data collected by interviews with students were excluded.
8. Studies in which interviews with students were used as pilot studies for the development of methodology (e.g. subsequent questionnaires) were excluded.
9. Studies in which data/results of interviews with students were not reported separately from results derived from other methods of data-collection (e.g. observation) were excluded.
10. Studies in which data/results of interviews with students were not reported separately from results derived from other sources of data (e.g. teachers) were excluded.

Characterising included studies

The studies remaining after application of the criteria were keyworded (using EPPI-Centre (2003) Core Keywording Strategy, Version 0.97). Additional keywords that are specific to the context of the review were added to those of the EPPI-Centre. All the keyworded studies were added to the larger EPPI-Centre

Research Evidence in Education Library (REEL) database, for others to access via the website.

Detailed description of studies in the in-depth review

The studies included in the in-depth review were data extracted, using the EPPI-Centre guidelines and data-extraction questions. This enabled the Review Group to examine systematically each study against the same predetermined questions. The data-extraction details are stored on the EPIC database.

Synthesis of evidence

The data were synthesised to bring together the studies which answered the review question and which met the quality criteria relating to appropriateness and methodology.

Results

Six themes were identified from the studies as key to motivation. These themes are presented in the order of frequency with which they were identified by the studies in the in-depth review:

- the role of self
- utility
- pedagogy
- peer-group influences
- learning
- curriculum

The role of the self: summary of points

- Pupils make decisions about school subjects as a result of a range of interconnected factors that occur over time.
- Once made, these decisions become the dominant influence on the levels of engagement.
- A belief in innate preferences for particular subjects can be confirmed by parental preferences.
- The dichotomy between performance and mastery goals is too simplistic.
- Group work appears to result in greater engagement by pupils.
- Teacher expectations impact on the effort expended by pupils on school-related work.
- Boys interviewed in one study felt that the adult community held erroneous perceptions about how they saw themselves and how this impacted on their motivation to learn.

Utility: summary of points

- Students appear to be more motivated by activities that they perceive as useful or relevant.
- Even where students perceive a task to be useful, they are not necessarily motivated to go beyond the requirements of the specified learning task.

Pedagogical issues: summary of points

- Some pupils perceive school work as boring and repetitive.
- Pupils perceive that a teacher's approach, attitude and enthusiasm influence their engagement.
- Pupils appear to be more engaged with lessons that they perceive to be fun.
- Pupils appear less interested when classroom activity takes a formal, passive form.
- Pupils express a preference for collaborative work.
- Authentic learning tasks are more likely to cognitively engage pupils.

The influence of peers: summary of points

- Being perceived as clever appears to be socially acceptable and a source of social respect amongst peers. However, if 'cleverness' is combined with other characteristics that transgress peer-group norms and values, then it is perceived to be less acceptable.
- Pupils perceive that the norms and organisation of 'school' interfere with other more desirable forms of peer-group interactions.
- Pupils frequently expressed the importance of not being made to appear foolish in front of their peer group.

Learning: summary of points

- Pupils believe that effort is important and can make a difference.
- Pupil effort appears to be influenced by the expectations of the teacher and expectations of the wider community.
- Pupils suggested that increased self-understanding came from collaboration, varied methodology and active, experiential work.

Curriculum: summary of points

- Some pupils perceive the curriculum to be restricted in what it recognises and values as student achievement.
- Curricula can isolate pupils from their peers and from the subject matter.
- The way that the curriculum is mediated can send messages that it is not accessible to all.
- The way that assessment of the curriculum is constructed and practised in school appears to influence how pupils see themselves as learners and social beings.

Conclusions

The review set out to answer the specific question about what pupils, aged 11–16 believe impacts on their motivation to learn in the classroom. As the review findings are derived from a small number of studies (eight), the conclusions are cast in tentative terms.

The six themes listed in the results of this review represent a wider range of influences identified by the eight studies in the in-depth review. The wide range of influences would suggest that motivation is not a simple or binary concept.

Motivation, and indeed demotivation, is the result of causal chains rather than single causes. These causal chains help pupils to make affective decisions about particular subject areas. Once these decisions are made, they are used to evaluate and assess subsequent interactions with similar learning topics or situations. If the affective decision is negative, disaffection is likely to occur. The extent, however, to which the pupil disengages will depend on other factors related to motivation (for example, utility).

What happens in classrooms can make a difference; what teachers do can impact both positively and negatively on pupil motivation. Teacher expectations can be too low; there can be overemphasis on activity at the expense of cognitive engagement. The good news is that the activities that pupils seem to enjoy are the very ones that appear more likely to result in cognitive engagement rather than passivity.

While what teachers do appears to impact significantly on pupil motivation, it is not the only influence. This review suggests that factors external to the classroom and the school also have an impact: for example, parental opinions of subject matter and the wider cultural view of the worth of education. Consequently, while teachers can make a difference, both positive and negative, they may not by themselves be able to change the motivational profiles of disaffected and/or disengaged pupils.

The fact that only eight studies were identified for the in-depth review suggests that there is a lack of suitably robust studies with a focus on pupil views available. While there were many studies that used questionnaires and interviews to gather pupils' responses to pre-identified traits of motivation, only eight could be identified that concentrated on pupil voice. Even then, only one study in the in-depth review actively involved pupils themselves in the design and conduct of the research. This lends weight to the discussion in section 5.1 where it is suggested that the research paradigm, in which much of the research into pupil voice is located, may be unable to provide the appropriate methodologies for the collection and analysis of such qualitative data.

Implications

It would seem easier to ensure that pupils' inherent desires to learn are nurtured rather than to try to change negative affective decisions back into positive ones at a later stage. Across the studies in the in-depth review, it would appear that engagement is more likely if:

- the lessons are perceived as 'fun'
- the lessons are varied and participative
- teachers favour collaborative methodologies
- pupils perceive activities as useful and authentic

As a result of the influence that teachers and pedagogy can have on pupil motivation, policy-makers may require to examine:

- teacher attitudes, expectations and pedagogy within secondary schools
- the curriculum for the 11–16 age group, in particular what is recognised and valued as student achievement and the role of assessment in nurturing or negatively influencing motivation

The lack of research which provides a reliable insight into pupil views on motivation is a cause for concern. There is a need for further research that elicits genuine pupil voice and opinion as opposed to pupil responses to predetermined questions and concepts. More specifically, research is required to shed further light on the role of affective decisions on motivation to learn in the classroom.

- Are young people in the UK making affective decisions that directly influence their motivation to learn in the classroom?
- At what point might these decisions be formed?
- What influences such decisions?
- Is it possible to change these decisions once they are made?

1. BACKGROUND

1.1 Aims and rationale for current review

This review sought to investigate pupils' views of what motivates them to learn in the classroom. From previous work in this area, there are a number of crucial issues that need to be addressed in relation to motivation and learning.

- There is difficulty in defining motivation given its multi-factorial nature. The Review Group seeks, through a series of systematic reviews, to develop further understandings of the concept of motivation.
- Research into intrinsic and extrinsic motivation has hitherto resulted in differing conclusions in relation to the correlation between the two (Cameron *et al.* 2001; Deci *et al.*, 1999). The Review Group is concerned not only with the relationship between these two 'types' of motivation but also with how schools recognise and impact on them to support classroom learning. This Review Group is interested in both intrinsic and extrinsic factors related to motivation; more specifically, the review is interested in the intrinsic and extrinsic factors that impact on pupils' motivation to learn in the classroom.
- Given the current concern (Demos, 2002; Scottish Executive Education Department, 2001) that significant numbers of pupils are becoming disaffected and disengaged from classroom learning, this Review Group is interested in what impacts on pupils' motivation to learn as they move through the school system. Why do some appear demotivated by the process, while others remain motivated? In this respect, the Review Group is also interested in what demotivates pupils because of the potential for disaffection and disengagement from school education. Thus we need to understand better the relationship between classroom level actions and pupils' motivation.

Three major questions arose that guided the Review Group's work:

1. What factors impact on pupils' motivation to learn in the classroom?
2. Can teachers create conditions in the classroom that sustain, guide and enhance an inherent motivation to learn and how might they do this?
3. Is it possible for teachers to rekindle motivation in those who have become disaffected and/or disengaged from the formal learning process?

The development of the review question and the scope of the review were defined by the Review Group in conjunction with the user groups.

1.1.1 Aim of the review

A crucial factor to emerge from discussion with the user groups for the project was the role that teachers can play in stimulating motivation to learn in the classroom.

The aim of this first systematic review was to address – at least in part – the first general question outlined above: what factors impact on pupils' motivation to learn in the classroom?

This first review will focus on pupils' perceptions of factors that:

- impact positively or negatively on pupils' motivation to learn in the classroom
- occur both within and outwith the classroom
- are intrinsic or extrinsic to the individual

1.2 Definitional and conceptual issues

The term 'motivation' is derived from the Latin word meaning 'to move'. Thus it might be argued that motivation involves anything that moves an individual to action and, in the case of schools, what moves an individual to learn. Ames and Ames (1989) describe motivation as the impetus to create and sustain both intentions and goal seeking acts. Despite these insights, the term 'motivation' is incredibly difficult to define. Maslow (1970) and Atkinson *et al.* (1990) consider motivation to relate to a number of basic human needs; Oxford and Shearin (1994), in an analysis of 12 motivational theories or models, identify six factors that relate to motivation (attitudes, beliefs about self, goals, involvement, environmental support and personal attributes), while the recent *Systematic review of the impact of summative assessment and tests on student's motivation for learning* (Harlen and Deakin Crick, 2002, online) acknowledges that 'motivation is a complex concept' that 'embraces... self efficacy, self regulation, interest, locus of control, self esteem, goal orientation and learning disposition' (p 1). It would seem that motivation cannot be conceived as a single entity.

There can be some confusion between the terms 'disaffection' and 'disengagement' since they are so often used synonymously. The following definitions, which will be used by this Review Group, are provided as a means of differentiating between the terms for the purposes of this review. It is acknowledged that other interpretations could be made.

A disaffected pupil is one who no longer sees any purpose in school or learning. Such pupils may feel that they have learned all that they need to learn and/or they may feel that the material that the school offers to them for learning is irrelevant to their needs. As such, they simply 'play out time' until they are able to leave school. Some of these pupils may display behavioural difficulties in classes that they see as particularly irrelevant. Others, however, may not show behavioural difficulties. Indeed these pupils may even appear to be engaged with the learning process but this is simply an alternative tactic in 'playing out time'. Such participation, however, is likely to be minimal – enough to please the teacher and keep people 'off their back'. In this instance, such pupils are demotivated to learn but motivated to achieve minimum hassle.

A disengaged pupil is one who has lost connection with the learning process. Such pupils may well see the point to learning, value their education and, indeed, be motivated to learn. However, they may have, for example, an emotional problem that is acting as a barrier to their learning. In this case, were the

emotional difficulty to be alleviated, they would be likely to re-engage with learning.

A number of definitions of motivation currently exist. These have varying emphases and have largely emerged from theoretical considerations. There is evidence that the degree of motivation or demotivation individuals feel affects their levels of engagement with a task, enjoyment of activities, how and what they learn and ultimately their performance. Given that demotivation can lead to disaffection with, and even disengagement, from learning, what pupils themselves have to say about their motivation to learn or not is an important prerequisite for informing teaching practices in the classroom.

1.3 Policy and practice background

Following the Elton Report (DES, 1989), a sense of balance between sanctions and rewards was sought. Schools instigated a plethora of reward systems, with star charts and happy faces in abundance. In most cases, concrete rewards focused on external prizes such as pencils or stickers. The teacher set goals or targets for such rewards, with the pupil being little more than a passive participant in the process. In all this, the underlying philosophy was one which suggested that curative reprimand and external reward could motivate pupils to engage with learning. The adoption of this inherently behaviourist approach by schools had predictable consequences. In contrast to the agentive learning advocated by Bruner (1996), Poplin (1988), McCombs (1993), and others, learners were placed in a passive role, controlled by external factors. The result of this passivity, it could be argued, is loss of interest in the curriculum, and opportunities for being creatively involved in the learning process are curtailed (Kohn, 1993). Such approaches imply that behaviour can be directed by a single extrinsic source when the literature suggests that numerous factors contribute to the adoption of a particular behaviour.

Despite this history of emphasis on behaviourist approaches, there has been a recent shift in the rhetoric being used at national level. Words, such as self-regulation, self-discipline, self-esteem and self-efficacy have become embedded in the discourse. In England and Wales, the 1997 Education Act, and in Scotland the Discipline Task Groups (Scottish Executive Education Department, 2001) both encouraged *self-discipline* in schools. However, an increased awareness of the importance of citizenship and the active role that young people should play in society (Crick, 1998; Learning and Teaching Scotland, 2002) has led to a perceptible lack of harmonisation between the prominence given to young people by schools and that given by society. This move towards the concept of a more autonomous group of young people who are self-motivated has left the traditional structures of compliance and control in disarray (McLean, 2003).

The UK Government is committed to 'high performance, high equity' (DfES, 2003) in education. This commitment is accentuated by a desire that teaching and learning should create 'active, skilled and independent learners' (DfES, 2003). However, tensions are evident in policy. The Key Stage 3 National Strategy, *Behaviour and attendance: in-depth audit for secondary and middle schools*, recommends that, prior to the audit, references are collated relating to rewards and sanctions in the school's most recent Ofsted report. The *prompts for interviews* appear to have an inbuilt assumption that rewards and sanctions are

an effective way to ensure behaviour and attendance are improved and accordingly ask schools to consider how the system might be improved. It also appears to assume that better behaviour and attendance will lead to better motivation within the pupil. We, however, would challenge this assumption and argue that a pupil's physical presence in the classroom does not necessarily result in greater motivation to learn. While *Better Behaviour, Better Learning* (Scottish Executive Education Department, 2001) acknowledges the link between the intrinsic value of effective learning and teaching and behaviour, it also indicates a clear commitment to positive discipline through rewards and sanctions with little evidence to support the relationship.

The Alliance for Excellent Education, based in the United States of America, cites findings from the American Youth Policy Forum workshop where it was stated that 'today's students feel as though high school is irrelevant, that classes are boring, and that they are just passing time until something important [...] comes to pass' (American Youth Policy Forum, 2000, p 4). Scales (1996) discovered that 40% of high school pupils and nearly 50% of middle school pupils reported feeling disengaged from the education process. In England, Hampshire County Youth Services have, as one of their targets in their strategic development plan 2000–2003, that each district should establish projects which will benefit young people who have become disengaged from education and/or their local community (Hampshire County Council, 2000). Thus, some would argue that demotivation can lead to disengagement and disaffection from school and consequently the formal learning process.

1.4 Research background

A number of meta-analyses of research in the field have been conducted: for example, Cameron and Pierce (1994), Deci *et al.* (1999), Rawsthorne and Elliott (2000), Rummel and Feinberg (1988), and Utman (1997). These highlight the complex nature of the motivational process. Whilst much evidence points to the adverse effects of extrinsic rewards (including praise) on intrinsic interest and creativity, for example, there is ongoing debate about whether or not extrinsic motivators are always necessarily 'a bad thing'. When tasks are perceived as boring, for example, and incentive is low, there is evidence to suggest that extrinsic rewards may have the effect of increasing the probability of task completion. The majority of studies in the area have also made use of an experimental design. Much less research has been conducted in the natural setting of classrooms. The research, moreover, has traditionally examined the effect of contingent reward on subsequent involvement in a particular activity. There appears to be little research that explores the views of pupils regarding their own motivation and what works for them.

Various writers suggest that a positive motivation towards learning is a disposition that all learners have. Maslow (1970) suggests a hierarchy of needs that he thought had to be fulfilled and that a need to learn is one such human fundamental; Atkinson *et al.* (1990) suggest that motivation relates to three categories of needs that motivate us to action (survival, social and curiosity); McCombs (1993) cites previous studies and argues that learners of all ages 'are naturally quite adept at being self-motivated and at directing and managing their own learning on tasks they perceive as interesting, fun, personally meaningful or relevant in some way (McCombs, 1991; 1993; 1994)'. Poplin (1988) suggests that

a fundamental theme running through a holist/constructivist approach to learning is that integrity is a primary characteristic of the human mind. An argument exists, therefore, that humans are inherently motivated to learn, and psychoanalytic psychologists (Freud, Adler, Jung and Erikson among others) have explored these intrinsic motives within people. However, behaviourist psychologists (such as Pavlov, Skinner and Thorndike) were interested only in extrinsic factors that influence motivation. Further dichotomies of this internal and external kind exist. Cannon (1929), for example, refers to homeostatic and non-homeostatic mechanisms. Some actions, such as changes in body temperature, occur automatically (homeostatic), while others require the person to engage in some kind of agentic behaviour (Bruner, 1996). Hunger, for example, requires us to act in a conscious manner (non-homeostatic). However, whether it is wise to delineate the debate and discuss the concepts of intrinsic and extrinsic motivation separately is debatable. Whilst it is possible to experience intrinsic motivation while participating in learning (Deci, 1975), it may be extrinsic factors in combination with intrinsic factors that push us on to our ultimate goal. Thus intrinsic motivation may be the result of numerous extrinsic requirements. Actions occur when the internal and the external factors work together to engender a particular behaviour. It is likely, therefore, that motivation is the result of an interplay between the two.

The work of Carol Dweck may be of interest with respect to this internal/external relationship in motivation. According to Dweck (1995), learners can hold one of two, very different implicit beliefs related to learning: 'entity' and 'incremental'. She suggests that these beliefs impact very differently on how individuals approach learning and teaching. 'Entity theorists' believe that intelligence is fixed and, although they believe that they can learn new information, they also believe that this will not alter their overall intelligence level. Thus learners holding entity beliefs may explain their failure in terms of lack of ability rather than lack of effort. Choh and Quay (2001) suggest that entity theorists are 'more likely to react helplessly in the face of failure and show negative feelings'. On the other hand, 'incremental theorists' 'focus more on behavioural factors as the causes of failure and they view intelligence as something that can be cultivated through effort. Setbacks motivate them to continue to work toward mastery of the tasks' (Choh and Quay, 2001). Dweck and Leggett (1988) suggest that, when learners are faced with failure, they respond in particular ways depending on the theory of intellect that they hold. Some learners are performance-orientated and perceive failure as a direct result of their lack of ability. Other pupils are mastery-orientated and perceive failure as a direct result of their lack of effort. Learner motivation, therefore, is affected differently by the experience of failure, depending on the theory of intellect that is held because it shapes attitudes to achievement and explanations of progress. A learner who is mastery-orientated may be highly motivated by failure because they are more likely to believe that, if they simply try harder, the task can be achieved. The importance in this work lies in the implication that, despite inherent dispositions towards particular aspects and ways of learning, learners are not born with particular beliefs about intelligence or learning. These beliefs are formed through our experiences of, and interaction with, the environment in which we find ourselves. Given that beliefs are created, then teachers may be in a position to influence positively the beliefs that learners hold: whilst intrinsic motivation cannot be coerced, it can be facilitated (McLean, 2003).

1.5 Authors, funders and other users of the review

The review has been undertaken by this Review Group because all its members have both expertise and interest in the area of support for learning. While the group had no specific expertise in undertaking systematic review work, various members of the team have undertaken research related to motivation, social, emotional and behavioural difficulties, exceptionality and inclusion.

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Users of the review include the Scottish Executive Education Department; the Scottish Parent Teacher Council; the Scottish Support for Learning Association; teachers undertaking the Diploma in Support for Learning; and undergraduates and post-graduates undertaking a range of courses within the University of Glasgow. These groups have been both involved in the formation of the protocol and informed of progress and results at various stages of the review.

1.6 Review question

What do pupils, aged 11–16, believe impacts on their motivation to learn in the classroom?

The review included a descriptive mapping of all pupil voice studies focusing on motivation to learn.

Definition of pupil voice

In order to establish what we mean by ‘pupil voice’, it is perhaps useful to clarify what we do not mean. We do not mean any expression given through the solicitation of answers to predetermined questions mediated, for example, by a questionnaire. We follow the definition given by professor Jean Rudduck, Director of the project ‘Consulting pupils about teaching and learning’ within the Teaching and Learning Research Programme (TLRP) of the Economic and Social Research Council (ESRC). She suggests that

Pupils’ voice is the consultative wing of pupil participation. Consultation is about talking with pupils about things that matter in school. It may involve: conversations about teaching and learning; seeking advice from pupils about new initiatives; inviting comment on ways of solving problems; inviting evaluative comment on recent developments in school or classroom policy and practice. (Rudduck, 2005, p 1)

This forms the basis of the criteria which we applied to the review.

Population

The target population was pupils of secondary-school age (in the UK: 11–16) This is the age group where most concerns lie with regard to demotivation (Demos,

2002; DfES, 2002), although it is recognised that this concern exists at all stages of compulsory schooling. Studies that might involve pupils of secondary school age reflecting on their earlier experiences of schooling were included in the initial mapping stage.

Topic focus of studies to be reviewed

The focus for the review was pupils' beliefs and opinions about what impacts on their motivation to learn in the classroom. Thus, studies that did not report on pupils' voices and reflections were excluded. Looking at pupils' views meant that factors outside the classroom could be involved. The Review Group was interested in identifying all such factors. By concentrating on pupils' views of what impacts on their own motivation, it was hoped that the results of research would include both intrinsic and extrinsic factors.

Geography

There was no geographical restriction placed on the search. In fact, the Review Group was keen to include research from regions traditionally excluded from reviews. The only restriction was that the study be available in English.

Date

As a result of international agreements, such as the United Nations (UN) Convention on the Rights of the Child (UN, 1989) and the Salamanca Statements (UNESCO, 1994), the debate on inclusion and children's rights came to the fore. The rights of young people and, in particular, their right to be heard and have their views taken into account in decisions affecting their lives became embedded in the discourse. The Crick Report (Crick, 1998) and the citizenship agenda, coupled with Education Acts (School Standards and Framework Act 1998; Standards in Scotland's Schools, etc. 2000 Act) have resulted in an increased focus on the direct participation of young people in their education. Concern about motivation underpins many of the mechanisms put in place as a result of this legislation (Education Action Zones, School Councils) and pupil voice is a core component of this.

The period from 1998 to the end of April 2004 was selected for this review. This permitted research to be obtained that had been undertaken since the drive for pupil participation, pupil voice and concerns surrounding motivation had begun to receive greater recognition.

Study type

Only studies that were rooted in pupils' own perspectives were included in the review. These were required to be evidential rather than philosophical. It was anticipated that the research would be qualitative, rather than quantitative, in nature. However, previous reviews (for example, Harden *et al.*, 2004) have identified that such studies are not always easily classified as either quantitative or qualitative. While there is a good deal of agreement about what constitutes a good quality quantitative study, good quality qualitative research proves more difficult to identify.

2. METHODS USED IN THE REVIEW

2.1 User-involvement

2.1.1 Approach and rationale

The Advisory Group brought a variety of perspectives to the review. Of particular importance were the colleagues from other European countries and Africa whose different viewpoints were useful when considering terminology and meaning.

In view of the limited time available for the review, it was not always possible to involve users throughout the review process. However, representatives of the user groups were involved at various stages and in various ways throughout the review process.

2.1.2 Methods used

Focus groups were conducted with a cross-section of teachers at the beginning of the review in order to establish the review question. The teachers involved represented primary schools, secondary schools, special schools and units for young people with social, emotional and behavioural difficulties from around central Scotland. Feedback from the Advisory Group regarding the draft protocol allowed the team to develop the framework further.

The pupil representative from the Advisory Group was involved in various stages of the review itself. Given that pupil voice was of prime concern to this review, it was important that his views regarding the definitions of disengaged and disaffected pupils were represented. The pupil representative also discussed the issues surrounding terminology through informal discussions with his peers; these also fed into the review process. He was also involved in web-searching and helping to map the studies that were included in the review. He contributed feedback for the data analysis and synthesis, having read several of the articles for inclusion in the study.

2.2 Identifying and describing studies

2.2.1 Defining relevant studies: inclusion and exclusion criteria

The exclusion criteria were designed to eliminate the studies that did not directly relate to the review question. The exclusion criteria were as follows:

1. Does not involve pupils aged 11–16
2. Centres on pupils not educated in secondary schools (or their equivalent)
3. Does not report on primary research in which pupils were asked about their motivation to learn

4. Is not written in English
5. Does not contain details of research methods and study
6. Reports on data stated as being collected before 1998

2.2.2 Identification of potential studies: search strategy

Reports were identified from the following sources:

- Bibliographic databases
- Search of journal publishers' web pages or handsearching of key journals
- Citation searches of key authors/papers
- Reference lists of key authors/papers
- References on key websites
- Personal contacts
- Direct requests to key informants

Details of the search terms are provided in Appendix 2.2.

The Review Group used EndNote to keep track of, and code, studies found during the review.

2.2.3 Screening studies: applying inclusion and exclusion criteria

Titles and abstracts were imported and entered manually. The exclusion criteria were successively applied to (i) titles and abstracts and (ii) full reports. We obtained full reports for those studies that appeared to meet the criteria or where we had insufficient information to be sure. These reports were entered into a second EndNote file and the exclusion criteria reapplied to the full reports. Those reports that did not meet these initial criteria were excluded.

2.2.4 Characterising included studies

The studies remaining after application of the criteria were keyworded, using EPPI-Centre (2003) Core Keywording Strategy, Version 0.97. Additional keywords that are specific to the context of the review were added to those of the EPPI-Centre (see appendix 2.3). All the keyworded studies were added to the larger EPPI-Centre database, REEL, for others to access via the website.

2.2.5 Identifying and describing studies: quality-assurance process

All members of the Review Group applied the exclusion criteria to a sample of the papers in a moderation exercise. Thereafter, application of the inclusion criteria and the keywording was conducted by pairs of Review Group members working first independently, and then comparing their decisions and coming to a consensus. Members of the EPPI-Centre also assisted in applying criteria and

keywording studies for a sample of studies as second reviewers as part of the quality-assurance process.

2.3 In-depth review

2.3.1 Moving from broad characterisation (mapping) to in-depth review

The specific question for the in-depth review was established as:

What do secondary school pupils believe affects their motivation to learn in the classroom (or school)?

In order to identify the studies that would address this specific question, a second set of exclusion criteria was developed with a more specific focus and applied to all studies included in the map.

7. Studies which did not report findings of data collected by interviews with students were excluded.
8. Studies in which interviews with students were used as pilot studies for the development of methodology (e.g. subsequent questionnaires) were excluded.
9. Studies in which data/results of interviews with students were not reported separately from results derived from other methods of data-collection (e.g. observation) were excluded.
10. Studies in which data/results of interviews with students were not reported separately from results derived from other sources of data (e.g. 'teachers') were excluded.

The studies that remained following the application for the exclusion criteria were used in the in-depth review.

2.3.2 Detailed description of studies in the in-depth review

The studies included in the in-depth review were data-extracted, using the EPPI-Centre guidelines and data-extraction questions. This enabled the Review Group to examine systematically each study against the same predetermined questions. The data-extraction details are stored on the EPIC database.

2.3.3 Assessing quality of studies and weight of evidence (WoE) for the review question

Studies, identified as meeting the inclusion criteria for the in-depth review, were analysed in depth using the EPPI-Centre's detailed data-extraction software, EPPI-Reviewer. Data-extraction was completed by pairs of Review Group members, working first independently, and then comparing their decisions and coming to a consensus.

The EPPI-Centre weight of evidence (WoE) framework was used to make explicit the process of apportioning different weights to the findings and conclusions of different studies. In EPPI-Centre systematic reviews, the assessment is made on four criteria. The first three (criteria A–C) distinguish between the different types of judgement that need to be made to assess how much weight can be given to a particular study's evidence in the review. The fourth criterion (D) is an overarching criterion which takes into account the results of the assessment under criteria A–C. Criteria A and B are used to assess the methods and design of the study. Criterion A relates to the soundness of the study's methods, regardless of its appropriateness to the requirements of the systematic review. Criterion B relates to the appropriateness of the research design used for answering the review question. Criterion C is used to assess how relevant the focus of the study is (e.g. topic, population, setting, etc.) for answering the review question. Criteria B and C are review-specific and can lead to an assessment of the extent that a study contributes to the conclusions of a systematic review, notwithstanding the soundness of their research methodology. Criterion D is an overall summary that is calculated from criteria A, B and C to provide an overall weight of evidence.

WoE A – Soundness of methodology: Judgement of how well the study had been carried out was informed by the responses to questions about the internal methodological coherence during the data-extraction. These answers were given on the basis of the information in the study report, which may or may not have given an account of all aspects of the study required for judging its soundness. The judgement of methodological soundness was thus dependent on what was reported in the study. The lack of information about a certain feature did not necessarily mean that this feature was not attended to in practice by the study, just that it was not reported by the author of the study. Studies were rated as high, medium or low in relation to methodological soundness according to what was reported. This judgement was not review-specific.

WoE B – Appropriateness of research design for answering the review question: The second judgement was made in relation to the extent to which the type and design of study enabled it to be used to address the review questions. In theory, some study types or designs might be better matched than others to the focus of the review. This was not a judgement of the value of the study in its own right, but only in respect of how well its design enabled the review questions to be answered, and was thus review-specific. Studies were rated high, medium and low in relation to this aspect.

WoE C – Relevance of the particular focus of the study for answering the review question: As in B, this judgement concerns the match of the study to the purposes of the review and is not a judgement on the value of the study per se. In this case, the aspect of interest is the topic focus of the study; that is, how well the nature of the data collected helped to answer the review question. Again, the judgements were review-specific and made in terms of high, medium or low relevance.

WoE D – Overall weight that can be given to the evidence in relation to the review focus: The judgements for the three aspects were combined into an overall weight of evidence towards answering the review question. In doing this, where there was a difference in weighting between A, B and C, the overall weighting (D) was based on the majority rating, but with the condition that the overall weight could not be higher than the weight for C. Thus, if the study was rated high for WoE A and B but rated only medium for WoE C, then the overall

weighting had to be medium despite a majority weighting of high. This was the case for two studies, Hufton *et al.* (2002), and Griffard and Wandersee (1999).

The rationale for this was that a study judged to be giving evidence of only medium weight – on account of relevance of focus, context, sample and measures – could not provide high weight of evidence overall.

Due to the review focus on pupil voice, an explicit set of twelve criteria, adopted from the EPPI-Centre's review, *Children and Healthy Eating* (Thomas *et al.*, 2003), was used to weight studies under this heading. Thus each study was assessed according to whether:

1. the aims and objectives were clearly reported
2. there was adequate description of the context in which the research was carried out (including a rationale for why the study was undertaken)
3. there was an adequate description of the sample used and the methods for how the sample was identified and recruited
4. there was an adequate description of the methods used to collect data
5. there was adequate description of the methods used to analyse data

Each study was also assessed according to whether there had been 'some attempt', 'a good attempt' or 'no attempt' to establish the following:

6. the reliability of data-collection tools
7. the validity of data-collection tools
8. the reliability of the methods of data analysis
9. the validity of the methods of data analysis

Three final criteria were applied. These are related to the assessment of the *appropriateness* of the study methods. They are designed to ensure that findings, about what impacts on pupils' motivation to learn, are rooted in pupils' own perspectives. Studies were judged according to whether they:

10. used appropriate data-collection methods for helping pupils to express their views
11. used appropriate methods for ensuring the data analysis was grounded in the views of pupils
12. actively involved pupils in the design and conduct of the study

It is acknowledged that issues exist over what is meant by some of the terms: for example, 'adequate', 'clear', and 'appropriate'.

Finally, and again from the experience of previous Review Groups, identifying studies that are genuinely embedded in the views of pupils may prove problematic. Two further issues have been helpfully highlighted (Harden *et al.*, 2004) that could be developed to aid this decision-making process:

- a. Was pilot work carried out to ensure that the data-collection tools were meaningful to young people?
- b. Were ethical considerations taken into account (for example, confidentiality, consent, etc.)?

Criteria 1 to 9 were covered by the EPPI-Centre data-extraction process and a summary of these data is provided in Appendix 4.2 (Table A4.1).

The final three criteria (10, 11 and 12) were not covered by the data-extraction process. These criteria were considered by the group as a whole and the rating given was agreed by discussion and consensus. Details of the rating agreed by the group is provided in Appendix 4.2.

It was felt that the two further issues identified by Harden *et al.* (2004) could not be considered in detail as no study included in the in-depth analysis provided enough information on these issues to make a valid judgement.

2.3.4 Synthesis of evidence

The data were synthesised to bring together the studies which answered the review question and which met the quality criteria relating to appropriateness and methodology. This synthesis is based on the authors' (of the papers included in the in-depth study) interpretations and conclusions rather than the actual data collected in the studies as the primary data were not made available in an appropriate form for this to have been used for this review. The terminology used in this section of the review reflects the terminology used in the papers in the in-depth review.

In some papers (in particular the paper by Griffard and Wandersee, 1999), the findings and conclusions were based on data from a range of sources. As a result, it was impossible to isolate pupil voice. Those findings and conclusions included in this synthesis were those that the authors of the papers made clear included pupil voice. As a result, not all evidence presented here emerged solely from the voices of pupils.

Each paper in the in-depth review was examined and the key influences on motivation (explicitly referred to in the papers) were noted. These were then grouped into six themes. The themes were identified as existing explicitly within the papers included in the in-depth review. The themes were identified independently by the members of the Review Group and then agreed at a Review Group meeting. It is acknowledged that some of the points raised in the papers could fall into more than one theme, thus blurring the distinction between them. For example, the role of self and the influence of peers were, at times, closely related. It was decided by the group that, despite this overlap, the papers themselves reported on both the self and on peer influences, and thus should be reflected as separate themes. When information could be assigned to more than one theme, a group decision was taken as to the theme to which it should be consigned.

2.3.5 In-depth review: quality-assurance process

Data-extraction and assessment of the weight of evidence brought by the study to address the review question was conducted by pairs of Review Group members, working first independently, and then comparing their decisions and coming to a consensus. Members of the EPPI-Centre also helped in applying criteria and keywording studies for a sample of studies as second reviewers as part of the quality-assurance process.

3. IDENTIFYING AND DESCRIBING STUDIES: RESULTS

This chapter presents results of the stages of searching and screening, using inclusion and exclusion criteria, and the application of the EPPI-Centre and review-specific keywords. The numbers of studies at the various stages of the progression filtering of studies are given in a flow diagram of the process (see figure 3.1). The characterisation of the selected studies in terms of the keywords is described and the results are given of the quality-assurance procedures for this part of the process.

3.1 Studies included from searching and screening

The number of papers and studies at different points in the searching and screening processes are summarised in Table 3.1. This provides a summary of the number of papers and studies involved at various stages of the filtering process. Based upon the initial question 'What do pupils aged 11–16 believe impacts on their motivation to learn in the classroom?', the process of searching yielded 13,730 papers.

Table 3.1: Source of studies included in the systematic map

Identification	Number	%
AEI	1,975	14
ASSIA	298	2
BEI	573	4
CERUK	50	0.4
Education Research Abstracts	234	2
Education-line	14	0.2
ERIC	6,458	47
OCLC Articles first	699	5
OCLC Proceedings first	22	0.2
PsycINFO	3,385	25
REEL	0	0
Regards	22	0.2
Web searching general	0	0
Total	13,730	100

The search shows that ERIC, PsycINFO and AEI databases generated over 11,000 papers. Of these, ERIC accounted for almost half the total, whilst PsycINFO accounted for a quarter. AEI was the next significant yield at 14%. The others were relatively low yields.

The team decided that, due to the large numbers of studies found, a second screening should be applied where all studies prior to 1998 were excluded from the search. 9,649 studies prior to 1998 were found and excluded. This left a total of 3,543 papers for potential inclusion in the review. In the screening process all studies were labelled either IN or OUT with the relevant exclusion criteria noted. Table 3.2 indicates the exclusion criterion applied and the numbers excluded.

Table 3.2: Exclusion criteria and numbers excluded

	Criteria (more than one can apply)	Numbers excluded
Criterion 1a	Does not involve pupils age 11–16	1,247
Criterion 2a	Centres on pupils not educated in secondary schools* (or their equivalent)	107
Criterion 3a	Does not report on primary research in which pupils were asked about their motivation to learn	1,516
Criterion 4a	Is not written in English	4
Criterion 5a	Does not contain details of research methods and study	11
Criterion 6a	Reports on data stated as being collected before 1998	19
Duplicates		55
Total exclusions		2,959

After applying the exclusion criteria, 584 (17%) studies remained to go into the EPPI-Centre keywording stage. More than half of the exclusions were as a result of criterion 3a which laid emphasis on pupil voice. The next most significant criterion was 1a which located the pupils' age group between 11 and 16. This criterion meant that in the UK, we excluded primary education (5–11), junior schools (7–11), middle schools (8–12), sixth-form education (16–18), sixteen to nineteen (16–19), further education (16+). The category post-compulsory education (16+) was also excluded. In addition, the following 'years' in England were excluded: 1–6 and 12–13. In Scotland, fifth and sixth years were excluded. In the USA, grades 1–5 and grades 11–12 were excluded, as were elementary schools and post-secondary education.

Of the 584 studies labelled IN, the full texts of 37 could not be located, and 114 did not arrive on time. Full text screening was applied to the remaining 433 papers.

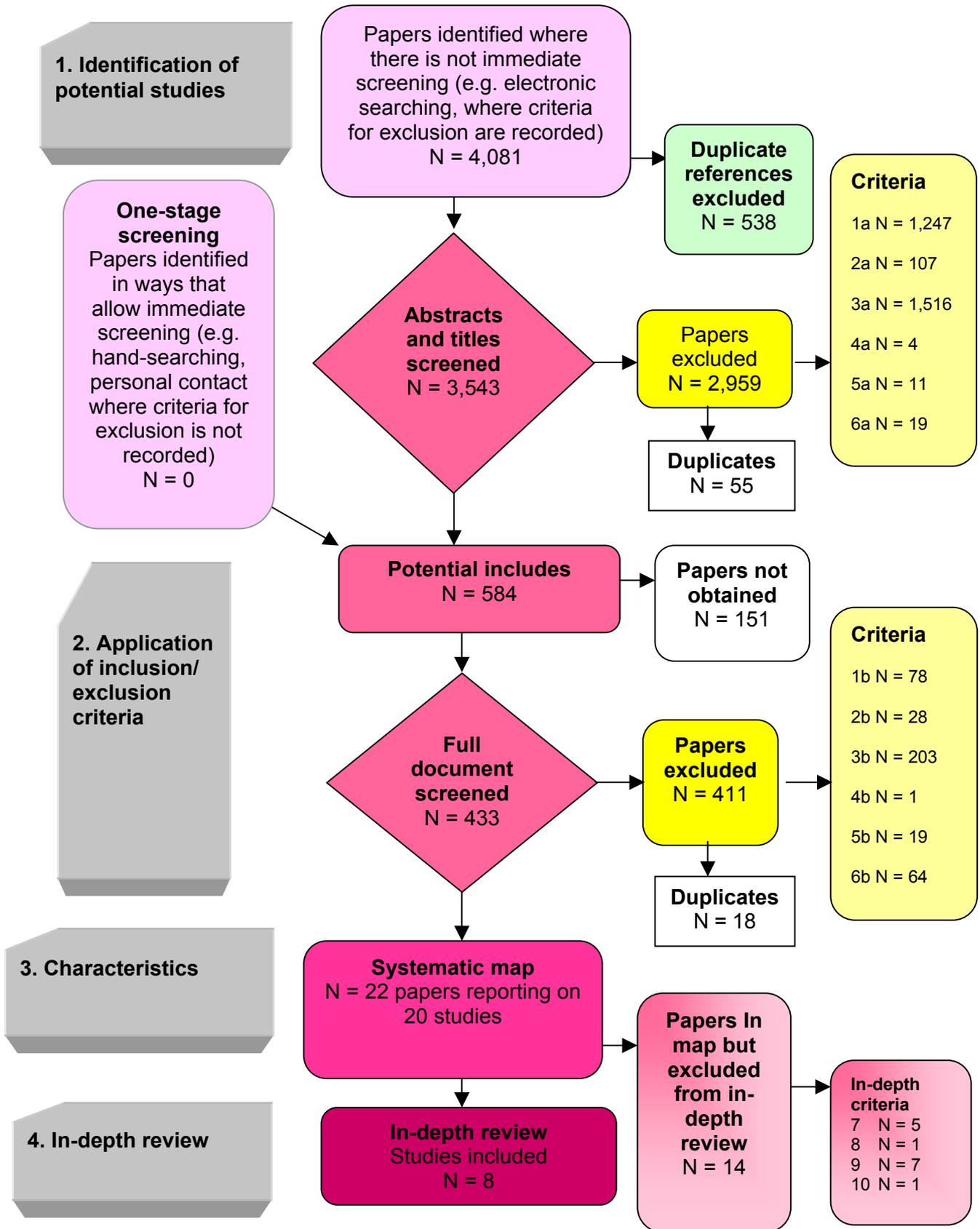
Table 3.3: Exclusion criteria and totals excluded on 433 full texts

	Criteria (more than one can apply)	Numbers excluded
Criterion 1b	Does not involve pupils age 11–16	78
Criterion 2b	Centres on pupils not educated in secondary schools* (or their equivalent)	28
Criterion 3b	Does not report on primary research in which pupils were asked about their motivation to learn	203
Criterion 4b	Is not written in English	1
Criterion 5b	Does not contain details of research methods and study	19
Criterion 6b	Reports on data stated as being collected before 1998	64
Duplicates		18
Total exclusions		411

Once again, criterion 3b can be seen to be the most significant, accounting for almost half the total exclusions. This was because study of the full papers made it clear whether or not the studies involved pupil voice. Studies which used questionnaires or directed interviews based upon pre-designed questions were excluded under criterion 3b because this did not allow primary research, asking pupils to express their own views about their motivation to learn.

Criteria 1b and 6b are the next most significant, collectively accounting for about one-third of the exclusions. This left 22 papers reporting 20 studies to be put forward for the keywording stage.

Figure 3.1: Filtering of papers from searching to map to synthesis



3.2 Characteristics of the included studies

3.2.1 Characterisation in terms of the EPPI-Centre keywords

The classification of the 20 included studies in terms of the keywords is given in Appendix 3.3. Tables A3.3.1 to A3.3.7 give the classification according to the EPPI-Centre keywords.

Data in Table 3.4 demonstrate that the 20 studies included in the map report on studies carried out across a range of over six countries. Three papers report one study carried out in three countries (the UK, the USA and Russia). One study compares attitudes of students in Canada and Scotland. As this review was limited to publications in English, one would expect that studies in English-speaking countries might be over-represented. Compared with other systematic reviews, a proportion of about two-thirds of studies from the USA, UK, Canada and Australia is not unusual. The outcome from this study follows this pattern. Two studies carried out in Europe are from Greece and Germany. The Eastern European study was carried out in St Petersburg as part of a larger study which included Kentucky in the USA and Sunderland in the UK. The remainder of the seventeen studies, representing over 75% of the total, emanate from North America, the UK, Australia and New Zealand.

Table 3.4: Country in which the study carried out (N = 20, not mutually exclusive)

Country	Number of studies
Australia/New Zealand	2
Eastern Europe (Russia)	1
Europe	2
North America	11
UK	6
Other	1

Four new criteria were applied to the 20 studies in the systematic map in order to create the final studies for the in depth review (see Table 3.5).

Table 3.5: Exclusion criteria and totals excluded on 22 papers reporting 20 studies from the systematic map

	Criteria (more than one can apply)	Numbers excluded
Criterion 7	Studies must report findings of data collected by interviews with students.	5 (23%)
Criterion 8	Studies in which interviews with students were used as pilot studies for the methods development (e.g. of subsequent questionnaires) will be excluded.	1 (5%)
Criterion 9	Studies in which data/results of interviews with students are not reported separately from results derived from other methods of data-collection (e.g. observation) will be excluded.	7 (32%)
Criterion 10	Studies in which data/results of interviews of with students are not reported separately from results derived from other sources of data (e.g. teachers) will be excluded.	1 (5%)
Total exclusions		14

This left eight studies to go forward to the in-depth review. The procedures described thus far are illustrated in Figure 3.1.

Table 3.6 indicates that the research activity in the review area has been strongest between 1999 and 2002. It also demonstrates that the research area under review has never been very active. However, it is likely to be relevant to a considerable number of researchers, research policy-makers and others.

Table 3.6: Publication date of studies included in the systematic map

Publication period	Number of studies
1998	1
1999	3 One in Education Line
2000	4
2001	5
2002	4
2003	3
Total	20

Two of the studies focused primarily upon enculturation and self-worth (Whitbeck *et al.*, 2001, and Bear *et al.*, 1998, respectively). Three studies have equal opportunities as the primary focus. A significant number of studies have a topic focus at the interface of the curriculum and teaching/learning strategies in a broad

range of curriculum areas (see Table 3.7). However, seven studies did not have a specific curriculum focus and deal with a range of issues, including attitudes, motivation to learn, under- and over-achievement, expectations and learning disabilities. All the studies focus on secondary school learners between 11 and 16 years of age; 18 also report on the age range 17–20. The learners in most samples (16) were of mixed sex. A total of three and two studies report on female- and male-only educational settings respectively.

The EPPI-Centre uses a system of classifying types of research by study design. A study may solely provide a description of a process. It may, in addition, identify relationships between different characteristics of a process. Finally, it may focus on an intervention and evaluate this against specific outcomes. Many reports of evaluative studies also explore relationships and provide descriptions of processes. For our review, almost half (11) the studies report on the exploration of relationships, with a further six focusing upon descriptions of case studies. Most studies were naturally occurring, with researcher-manipulated accounting for five studies.

Table 3.7: Distribution by curriculum/subject (N=20, not mutually exclusive)

Attribute	Number
Cross-curricular	2
ICT	1
Literacy – first language	2
Literacy further languages	1
Mathematics	3
Music	1
Physical Education	1
Religious Education	1
Science	4
Other curriculum	1
The material does not focus on curriculum issues.	6

Table 3.7 shows that the review involves a broad range of curricular areas with some overlap. This suggests that there is no obvious focus of attention for this type of study. However, mathematics and science are the two domains which receive the most attention in terms of specific curricular areas. Three of the four studies in science concentrate upon factors influencing girls' motivation in the sciences. Six of the studies do not have a specific curricular focus and deal with generic issues within the school system. These include areas such as learning disabilities, children's achievement-related perceptions, studies of pupil attitudes and issues relating to identity.

The main focus of the studies relates to teaching and learning (17) with a further twelve studies also focusing upon issues relating to the curriculum (6), equal opportunities (3) and other non-specific topics (3). Most studies involve mixed sex groups (17), with only two studies being girls only and three being boys only.

All studies were set within the secondary school system with two overlapping with the primary sector. One study, however, was conducted with households living on, or near, three unspecified North American Indian reservations in the Midwest of the USA.

3.2.2 Characterisation in terms of the review-specific keywords

Tables A3.3.3 to A3.3.7 in Appendix 3.1 refer to the review-specific keywords. All studies dealt with some aspect relating to the motivation of learners. Almost all the studies were carried out in the secondary sector (or its equivalent). The majority of studies focus upon the relationship of learners in a school community. All but one of the studies (Whitbeck *et al.*, 2001) investigated aspects of intrinsic motivation, extrinsic motivation or both. The exception had equal opportunities as its primary focus. Some of the studies are specific to pupils having either social and emotional behavioural difficulties (1), being gifted and talented (3), living with disabilities (1), or being disaffected (1). However, the largest sample of studies belong to wider samples covering broader areas relating to motivation.

All but one of the studies was published in peer-reviewed journals. The one study which was not published in this was by Hufton *et al.* (2002), which was a conference presentation made available on Education Line.

No clear identifiable combination is evident from these studies. Each study (see tables A3.3.3, A3.3.4 and A3.3.7) researches some aspect relating to motivation in a unique way. The only links between studies is between two papers (Elliot, 1999, and Hufton *et al.*, 2002) together with the conference paper (Hufton, 2002) which all form part of the same study.

See Appendix 2.3 for review-specific keywords.

3.3 Identifying and describing studies: quality-assurance results

3.3.1 Applying inclusion and exclusion criteria

The quality-assurance processes for searching, screening and keywording (described in section 2.2.5) were used.

Reliability of the screening was established by independent screening of a sample of 100 papers by the five group members and an EPPI-Centre member. All discrepancies between reviewers and the EPPI-Centre member were discussed and resolved. Thereafter, all papers resulting from the electronic search were screened on title and abstract, and shared among all group members. The results were then moderated through screening by a second group member. The number of papers where there was a dispute over inclusion was so small as to be considered insignificant. All discrepancies between reviewers were discussed and resolved.

After arrival of the hard copies (including electronic copies), all papers were screened independently by two team members using the same exclusion criteria. All cases of disagreement were resolved by discussion

In total, 22 papers were independently keyworded by two Review Group members. Again, any disagreement was resolved by negotiation.

4. IN-DEPTH REVIEW: RESULTS

4.1 Selecting the studies for the in-depth review

The systematic map, which was based upon 22 studies, indicates that interest in researching what factors impact upon pupils' motivation to learn in the classroom arose from four different, but overlapping, research areas:

- Social constructivist research: interest in exploring pupils' ideas and cognitive processes by making them voice their thinking
- Pedagogy: interest in learners' views about classroom learning
- Curriculum materials: interest in pupil interaction with, and the learning effectiveness of, specific types of curriculum materials
- Disaffection: interest in exploring issues relating to the reasons why pupils lose interest in school based learning

Seven broad areas appeared worthy of more detailed exploration in the in-depth review:

1. Pupil perspectives on motivation
2. Pupil perceptions about achievement
3. Pupil identity in the classroom
4. Pupil perspectives on learning
5. Pupil engagement with learning
6. Pupil attitudes to learning
7. Pupil identity in the classroom and school

Emerging from the map, a total of eight potential in-depth review topics, from across areas 1 to 7 above, were presented to the full meeting of the Review Group on 18 September 2004. There was overwhelming consensus that the highest priority should be given to one in-depth review question: ***What do secondary school pupils believe affects their motivation to learn in the classroom (or school)?***

By setting the focus upon pupil voice, the group felt justified in thinking that a number of pupils have difficulty in becoming motivated in a classroom within a school setting. It was felt that teachers, curriculum developers, school managers and policy-makers would benefit from such a review focus when structuring and monitoring effective learning experiences for all pupils.

The in-depth review question relates directly to the areas described in the conceptual framework in section 1.2: factors affecting pupil motivation, including aspects relating to beliefs about self, goals, involvement, environmental support and personal attributes.

The application of the exclusion criteria specified in section 2.3.1 resulted in eight studies for the in-depth review.

4.2 Comparing the studies selected for in-depth review with the total studies in the systematic map

The in-depth review was representative of the systematic map in several ways:

- The regions covered by the in-depth review were as diverse as the systematic map itself. Western Europe, North America, Eastern Europe and Australia were all covered. However, while studies from the UK were included in the in-depth review, the two studies from other areas of Western Europe were not.
- Most studies in both the in-depth review and the systematic map involved learners of both sexes. However, three of the four studies that involved only one gender from the systematic map were included in the in-depth review.
- As with the systematic map, the studies in the in-depth review in the main investigated aspects of both intrinsic and extrinsic motivation, with the exception of two that concentrated on intrinsic motivation.

The difference in range and scope of the studies in the map and the in-depth review is because of the way they collected their data. All studies in the in-depth review used interviews as a data-gathering tool, and the results and findings from this aspect of the studies are the focus of this review.

4.3 Further details of studies included in the in-depth review

Appendix 4.1 provides further details of the eight studies included in the in-depth review.

4.3.1 The aims of the studies

A characteristic of the eight studies in the in-depth review is that they have a diversity of specified aims. However, the common features apparent in all of the reports are the key factors underpinning motivation, engagement, attitudes, participation and students' perceptions about learning and teaching. For example, one of the aims of the Hufton *et al.* (2002) study was to examine a number of key factors underpinning educational motivation and engagement, in particular attitudes about schooling, self-evaluations of academic performance, patterns and rate of work at home and at school, and reasons why education might be valuable and how this would influence pupils' aspirations for the future. Similarly, Williams and Ivey (2001) studied one boy's pattern of engagement in an eighth- grade mathematics class.

One study (Nardi and Steward, 2003) looked specifically at children whose disaffection was expressed in a tacit, non-disruptive manner in the form of disengagement and invisibility, which manifested itself in a profile of quiet disaffection. Factors which encourage or motivate pupils to participate specifically in writing (Potter *et al.*, 2001), religious education (O'Grady, 2003) and modern languages (Diffey *et al.*, 2001) formed the basis of three studies, whilst generic issues relating to declining retention and achievement (Slade and Trent, 2000)

and factors that adversely affect meaningful learning (Griffard and Wandersee, 1999) form the basis of two studies.

4.3.2 Underpinning theories

All but two of the eight papers selected for the in-depth review were grounded within a framework of psychological theories of motivation. The focus of the theoretical framework in each case differed in breadth, from a fairly narrow focus on, for example, different type of goals (Potter *et al.*, 2001) or research confined to a specific subject (O'Grady, 2003), to a broad consideration of various aspects of motivation theory (Diffey *et al.*, 2001; Hufton *et al.*, 2002; Nardi and Steward, 2003; Williams and Ivey, 2001).

Within theories of motivation, an important distinction is frequently made between intrinsic and extrinsic motivation (e.g. deCharms, 1968; Deci, 1975; Lepper and Greene, 1978; Nicholls, 1984, 1989). In the former, activities are undertaken in the absence of constraint with the goal of improving learning and task mastery; in the latter, activities are taken under the constraint of some kind of external reinforcement.

Diffey *et al.* (2001), comparing motivation to learn a foreign language among Scottish and Canadian pupils, consider theories outlining the distinction between instrumental (i.e. extrinsic) and integrative (i.e. intrinsic) factors relating to foreign language learning but suggest that, since neither is in itself sufficient to account for a desire to learn a language, both the context for learning and within pupil factors must be taken into account. The set of theories which form the framework of the paper are, however, confined to those relating to motivation in second language acquisition rather than general theories of motivation per se.

A similar framework underpins the O'Grady (2003) study, where motivation to engage in religious education classes is explored from the basis of theories about engagement in this particular area. Although intrinsic and extrinsic motivation are not explicitly mentioned by the author, it is clear that the perceived importance of linking content to students' concerns, ideas, values and commitments places the focus on intrinsic rather than extrinsic motivation. The paper overall, however, is grounded more clearly within a framework of theories of learning (experiential learning, systems approach, constructivism), than in theories of motivation, and no real conclusions can therefore be drawn concerning the relationship between intrinsic motivation and engagement in the RE curriculum.

Although the differences between intrinsic and extrinsic motivation are also implicit in the Griffard and Wandersee (1999) paper, it has no explicit theoretical grounding in motivation theory. The study highlights the complexity of the relationship between motivation, engagement and learning in science classes by emphasising both metacognitive and cognitive processes as important influences on engagement, depth of understanding and consequently achievement in relation to scientific concepts.

Despite the fact that intrinsic and extrinsic motivational factors are present by implication throughout the case study of Williams and Ivey (2001), this paper, by considering the wider aspects of motivation theory, and by concentrating so closely on a single pupil, again highlights the complexity of factors which are

involved in pupil perception of motivation to learn. This paper is consequently discussed in greater detail below.

One aspect of motivation theory explored in three of the papers is goal theory. Although papers were not all categorised in this respect in the data-extraction, goal theory may be regarded as a subset of theories dealing with intrinsic and extrinsic motivation to the extent that goals are clearly influenced by either intrinsic or extrinsic factors.

Potter *et al.* (2001) examine motivation for writing from within the specific motivational framework of goal theory. This highlights the distinction between performance (or ego-enhancing) goals and learning (or task-orientated) goals, but again suggests that the relationship between goal orientation and achievement may not be as straightforward as some research in the area would suggest: that is, in some circumstances, a focus on performance goals can, contrary to expectations, result in an increase in effort (e.g. increases in effort to achieve success in exams). However, in this case, no distinction is made between learning that is deep and meaningful to the student and learning which is surface and strategic.

This paper also discusses the role of social and personal goals in motivation (Schutz, 1997; Wentzel, 1996) which in turn appear to be grounded in the classic social comparison theory of Festinger (1954) and temporal comparison theory (Albert, 1977) in which individual progress over time is considered more important than comparisons made with peers.

Further, the paper examines ways in which goals affect the writing lives of students and explores the interaction between their individual goals and school expectations. While individual goals are influenced by development and life issues, the paper suggests that it is not simply a case of performance versus mastery goals. Both are present and either can result in success in terms of what the school requires. This type of success can, moreover, be achieved without full engagement, suggesting again that the relationship between engagement and achievement is a complex one. This notion of the importance of different kinds of goals is further developed by a consideration of the differential influence of a focus on specific proximal goals as opposed to overall goals, such as purpose and audience in writing, the conclusion being that overall goals are more effective in motivating young people to write effectively. As has been suggested by Sansone and Smith (2000), when individuals are motivated to experience interest, there may indeed be a variety of different types of goals which are dependent both on individual and contextual factors, and the relationship between motivation, engagement and achievement is consequently not a simple one.

Two other papers (Hufton *et al.*, 2001; Williams and Ivey, 2001) are grounded within a much broader framework of theories of motivation rather than having a specific focus in one area (although they still incorporate aspects of goal theory).

Hufton *et al.* (2002), for example, while they do not provide a specific model of motivation, emphasise the importance of differentiating between cognition (which is grounded in attribution theory, theories of self-efficacy or self-expectancy) and engagement (which manifests itself in the form of effort and persistence). They also emphasise the importance of 'pre-decisional' and 'post-decisional' phases which Kuhl (1984) and Heckhausen (1991) suggest are important in goal setting and goal implementation. Although the authors suggest that it is often difficult

within school contexts to distinguish clearly between pre- and post-decisional phases, it is during the pre-decisional phase that pupils will engage in decisions about the value of a subject and therefore the extent of their commitment to it, while the post-decisional phase will determine the cognitive factors, such as volition, the initiation of action and persistence in the face of difficulty which are associated with the implementation of goals. The relationship between the two phases is, however, not always clear. Thus a pupil may actively select a subject for instrumental purposes but, because of initial lack of interest (and consequently lack of effort), fail to achieve. Another pupil, however, constrained to select a subject may, despite a lack of interest, demonstrate active engagement in the subject because he/she values academic success in that area.

Although a high level of engagement is generally seen as indicative of a high level of motivation, the authors, in common with Griffard and Wandersee (1999), point out that the extent to which a change in the level of motivation will result in a change in achievement is as yet undetermined.

The study therefore attempts to build an ecological understanding of pupil motivation through an examination of the complexity of the context and the individual, and how each affects and is constituted within the other.

The authors are particularly influenced by Stevenson *et al.* (1990) and Stevenson and Stigler (1992) which explore differences in the rate of work and achievement between American and Asian countries, and therefore set out to examine cognitions and behaviours related to academic success in three different contexts – the USA, the UK and Russia.

Traditionally, attribution theory (Weiner, 1979; 1980) has been used to predict the likelihood of engagement and achievement by examining the causes to which different individuals attribute failure or success. Measured on the three dimensions of locus, stability and controllability, the extent to which internal or external causes are regarded as contributing to task outcome will, the theory suggests, determine future expectations, emotions and performance on a task. Dweck (1999), drawing upon classic attribution theory and using it to distinguish between entity and incremental views of ability, also suggests the importance of the attribution of success to effort (as opposed to ability) as an important determinant of goal selection, the acceptance of challenge, perseverance in the face of difficulty and achievement outcomes. Hufton *et al.* (2002), however, question the dichotomous nature of much theorising over effort and ability, and emphasise the importance of context, particularly cultural factors, in making attributions. They suggest that when children's perceptions are explored the type of relationship between engagement, achievement and motivation suggested by attribution theory is more complex than the theories in the domain would suggest. In an apparent contradiction of the classic findings of attribution theory, for example, UK and USA pupils, who tended to attribute success to effort, were found to demonstrate lower work rates and achievement levels than Russian pupils who were more likely to attribute success to ability but who placed greater value on the acquisition of an education, not as means to an end, but as an important end in itself.

Although the specific focus in this paper was not on extrinsic/intrinsic motivational factors, the complexity of the relationship between these and engagement is again highlighted, with the recognition that extrinsic motivation has a significant role in motivation and engagement when the importance of personal behaviours

are considered by the individual to be in accord with the wider value system adopted within a culture.

The Williams and Ivey (2001) paper is set within a similarly wide framework of motivation theory. Although this paper is unusual in that it starts with a consideration of Aristotle's four causes and could, thus, be regarded as coming from a more philosophical point of view, it is nevertheless still grounded within a framework of psychological theories of motivation. Although early drive theories of motivation and more recent theories such as attribution theory, self-efficacy, goal orientation, volition and perceived usefulness are all found less than sufficient in themselves to explain the lack of engagement of the pupil who is the subject of the study, the behaviour is analysed within the specific framework of Rychlak's (1988, 1994) logical learning theory in order to emphasise the individual, idiosyncratic nature of engagement or disengagement in a mathematics classroom.

The authors begin by criticising theories of behaviour in general and motivation in particular, in their quest for narrow, scientific and linear models to explain causality, that is for focusing on the first two of Aristotle's four causes, the material and efficient, to the neglect of the formal and final levels of causality. As in the Hufton *et al.* (2002) study, moreover, there is a recognition that, in order to address this deficiency, the importance of examining contextual and cultural factors must be taken into account. The theoretical framework chosen for the study - logical learning theory - is chosen because, while it allows for the possibility of final causes in behaviour, it maintains the type of theoretical rigour which the authors consider to be important. The difference between Rychlak's theory and classic theories of motivation lies in its combination of scientific rigour and humanistic constructs. Rather than simply responding to stimuli (efficient cause), Rychlak suggests that human beings 'telespond' by taking a stand in relation to dialectical alternatives. This stand then becomes a premise which determines both action and the logical consequences which, in turn, arise from the choice of premises made.

A central premise which determines action, according to this theory, is what Rychlak (1988) terms 'affective assessment'. This is regarded as an innate capacity in human beings to take a stand by making positive or negative judgements about events, premises and actions which are perceived as meaningful to their existence. Once adopted, this stand becomes the basis upon which future action is grounded. What is significant about this theory is that an 'affection' is not brought about by either intrinsic or extrinsic factors, and, once formed, it is used to extend meanings to situations encountered. The authors claim that logical learning theory extends and builds upon earlier theories of motivation which are regarded as 'laying forth the precedent assumptions for the sake of which people typically (but not necessarily act)' (p 81). Logical learning theory therefore extends notions of concepts such as attribution, goals and self-efficacy by incorporating notions of final causality and choice. Thus an initial negative assessment made about a particular subject (in this case, mathematics) is used to justify and rationalise later decisions. The theory is used to give logical explanations for engagement or lack of engagement in terms of statements such as 'I just don't like the subject and never have'. Perhaps significantly, this type of statement is also made by two of the pupils in the Diffey *et al.* (2001) article in relation to foreign language learning:

P1 I think if you don't like French you can't really be turned on to like it . . . If you don't like it to begin with then there's . . . nothing you can really do.

P2 Someone told me once that opera is, like, you either have to like it or you don't . . . I think . . . it's kinda like French, you either have to like it (or) you don't. (p 177)

Nardi and Steward (2003) also study disaffection in mathematics from within the framework of a wide range of psychological theories of motivation and disaffection in particular, and theories of learning in general. One theory of motivation, which forms the basis of the study, again concerns the distinction between intrinsic and extrinsic factors. In this case, however, the theory is extended to incorporate the constructs, attributed to Norwich (1999) of 'identification', which considers the extent to which the importance of the subject to the individual is recognised and 'introjection' which, although not cited in the paper, Connell and Ryan (1984) had previously identified as self-regulation brought about by self-approval or disapproval through guilt, anxiety or self-aggrandisement, and which Norwich suggests may be the result of parental pressure.

In an attempt to address this complexity, the authors consider a combination of cognitive and affective perspectives necessary for both understanding and active engagement in mathematics.

The paper also addresses disaffection within the framework of a number of theoretical perspectives specific to the area. These include cultural transmission theory, processes theory and more recent integrative theories which account for disaffection, not as disruptive and deviant behaviour, as has been traditionally the case, but as a form of quiet resignation or resigned acceptance.

Other than the Griffard and Wandersee (1999) study, which had no specific grounding in motivation theory, the only paper which explicitly considers motivation outside a psychological paradigm is Slade and Trent (2000). Although the methodology used in all the studies selected can be classed as qualitative in design, this particular study is clearly grounded in a philosophical, rather than psychological, framework. There is consequently no consideration of the classic theories of motivation and no search for an objective reality which can be used to explain engagement or disengagement in general. Instead, there is a phenomenological approach in the 'genuine recognition that there may be a different reality for others' (p 202). In the face of the enormous diversity of phenomena which may impact on both engagement and achievement, the authors suggest that there is a dominant cultural predisposition to think and talk in terms of 'fragmentation and certainty' and 'false dichotomies' instead of in terms of 'interconnection and relativity'. By being entrenched in a culture which encourages the former, each discipline carries out research in a fragmented way with its own certainty regarding findings and solutions. The result is findings which produce strategies that, from the point of view of researchers, may appear to be successful, but, from the point of view of the recipients (the pupils), either 'miss the point or make things worse'. By adopting a different theoretical framework, this paper stands out from the others by clearly placing the focus on the viewpoint of the pupils and genuinely listening to what they have to say.

4.3.3 The design of the studies

The study designs were divided between ‘descriptions’, ‘explorations of relationships’, and ‘evaluations: naturally occurring’. There was some overlap with some studies falling into two categories. Three studies combine description with the exploration of relationships. Nardi and Steward (2003) cover both description and the exploration of relationships, specifically aimed at children whose disaffection was expressed in a tacit, non-disruptive manner in the form of disengagement and invisibility which manifests itself in a profile of quiet disaffection. Hufton *et al.* (2002) describe key factors underpinning educational motivation and engagement, and explore the relationship between motivation and engagement; peer relationships and willingness to work hard and motivation (and aspiration) in social and economic circumstances. Finally, Potter *et al.* (2001) describe pupils’ attitudes to writing, exploring the conflicts between what they perceived as effective writing and what they felt teachers valued. They also explore the relationship between meeting goals in school and interest in writing as an extra-curricular activity, demonstrating that those who are motivated to succeed through meeting school determined goals, were least likely to enjoy writing as an activity outside school. They then explore students’ relationships with their teachers and the curriculum related to literacy.

Two papers deal exclusively with the exploration of relationships. Williams and Ivey (2001) make use of transcribed interviews with a particularly disaffected, yet very articulate, student to note how current theories of motivation are confirmed or fail to confirm his lack of active engagement with mathematics. They try to justify a meta-theory based on analytic philosophy, logical learning theory, to describe and understand his self-perceived explanations of his own behaviour.

The researchers observed a single student over the period of a year. They took field notes and held interviews with the student. It must therefore be stated that, whilst the events were ‘naturally occurring’, any intervention by the researcher will cause a change in the situation. This study is really an interpretation of data. It focuses on the philosophy held by the researchers, and by the participant – in particular, the world view, the subjective agency in relationship to their environment, and the understanding of subjectivity held by both these parties. O’Grady (2003) simply explores the relationship between motivation, pedagogy and level of pupil involvement in religious education.

Diffey *et al.* (2001) describe and compare Canadian and Scottish pupils’ attitudes to learning French as a second language. Griffard and Wandersee (1999) explore the relationship between teaching and learning methods, and student understanding in a biology class, and evaluate school policy documents and participant educational artefacts. Formal and informal interviews with learners and teachers are used to ascertain learning gaps and difficulties along with prevailing pedagogical culture and activities in the environment, whilst Slade and Trent (2000) undertake large-scale interviews of schoolboys and evaluate these for consistently occurring perspectives, and identification of issues and problems in their schooling.

Only one study in the in-depth review used an explicit sampling frame. Potter *et al.* (2001) selected a range of pupils across the upper 5 and the lower 5 deciles of achievement according to their ‘fourth grade CTBS language subtest’ (p 47). Streaming was noted and conformed to early assignments, but none of the children was diagnosed with learning disabilities. The study uses pupils who took

part in a previous study in fifth and sixth grades. It is not clear, however, how these students were originally chosen. All studies used a convenience sample for the identification of schools. A number of studies used schools where access had been secured either through previous involvement of the researchers (Griffard and Wandersee, 1999; O'Grady, 2003; Potter *et al.*, 2001; Williams and Ivey, 2001), or where the researcher taught the pupils (O'Grady, 2003).

Methods of sample selection varied across the studies. For example, pupils in one study were randomly selected from school registers and then asked by their teachers and by the researcher if they were willing to take part (Hufton *et al.*, 2002). Another study to incorporate random selection was that of Slade and Trent (2000).

Only two studies did not provide any clear information on their methods of selection (Diffey *et al.*, 2001; Nardi and Steward, 2003). A number of studies provided limited information about the characteristics of the pupils in the sample. Atypical samples included Williams and Ivey (2001) who selected one pupil who stood out as an anomaly within a larger study, and Griffard and Wandersee (1999) who selected pupils who had experience in a specific subject area.

It is important to note, in terms of the reliability and validity of the various methodologies employed in these final eight studies, that they tend toward more qualitative and interpretive studies which do not focus so much on the reliability of the analysis of the data as the intention is to provide as full a picture as possible, crystallising the information around a limited number of assertions supported by description, evaluation and exploration of relationships.

Only one study (Slade and Trent, 2000) – the sample for which consisted of all boys, including those who were considered to be at risk or 'problem boys' and those who appeared neither to have, nor to be, problems in education – had a prospective allocation into more than one group. In the first, at each school participating, three groups of ten boys were randomly selected, including one group each of Year 9 and Year 11. The school also chose one group of mixed year 9 to 11 boys defined as 'boys at risk' either academically or in terms of behaviour. The groups were selected from:

- schools that participated in the initial focus groups
- focus groups from the other schools
- a small survey of girls

Groups of boys differed only on whether or not their schools were involved in the initial focus groups. The girls' groups were different in terms of gender. There were essentially two groups of 60 and 120 boys with two supplementary girls, giving a total sample of 182.

Those studies which had no prospective allocation but used pre-existing differences to create comparison groups included Hufton *et al.* (2002), who selected students at random from school registers by members of the research team and allocated these (in equal proportions of gender and nationality) to one of three teacher-determined academic groupings: above average, average or below average. If a pupil was allocated to a group that was already 'full', another individual was selected in their place. Each group was designed to have an equal number of pupils in order to ensure that responses reflected the full range of

ability in the school. Implicitly, nine groups (three countries and three academic groups in each) were formed. Potter *et al.* (2001) had no prospective allocation. They had a total number in the group of 19. Within this, several differences were identified (ethnicity, achievement and gender) and reported on separately. The group was made up of African-American students (6) and European-American students (13). Moreover, the group was made up of high achievers (8) and low achievers (11). The group was also analysed in terms of male (8) and female (11) perspectives. Three groups were identified by three separate characteristics: gender, achievement and ethnicity. Allocation was thus by an individual profile, based upon gender, ethnicity and achievement. Diffey *et al.* (2001) used nationality to differentiate the groups.

The remaining studies (Griffard and Wandersee, 1999; Nardi and Steward, 2003; O'Grady, 2003; Williams and Ivey, 2001) had no more than one group.

4.3.4 Methods of securing pupil voice

All of the included papers sought to discover pupils' perspectives/opinions, either explicitly or tacitly. Diffey *et al.* (2001), Griffard and Wandersee (1999) and O'Grady (2003) all sought pupil perspectives tacitly.

Griffard and Wandersee (1999) employed an ongoing evaluation of students' artefacts of learning, which included handouts, worksheets, journals, written examinations, writing assignments, archive data (reports) and teacher interviews. They also refer to field notes from observations (20 minutes to 3 hours, usually 1.5 hours) and interviews, which were taped and transcribed using the Patton 1990 interview guide approach. The interview questions and tasks probed students' understanding of biology concepts, especially about recent classroom activity, class notebooks, a fictional short story and independent research projects. The interviews were with the students and the principal teacher of biology.

Direct and indirect questions were asked about peers' and family's regard for the decision to come to the school, work ethic, confidence and role models, evaluation of the quality of science instruction at the school and at home, hobbies, extracurricular activities at both schools, and aspirations for the future. Subsequent interviews were designed to test emerging themes: that learning was not meaningful in the Biology II class, that self-evaluation and metacognitive skills were underdeveloped, and understanding of biology concepts in the curriculum were conducted. Whilst it can be seen that questionnaires were used, the Review Group felt that the face-to-face interviews in this study gave sufficient pupil voice to be included.

O'Grady (2003) used written and oral comments from pupils. He also employed pupil observation and asked the pupils to keep a diary for examination. He also used group discussions, which were recorded. While pupil opinions are not clearly stated in the aims, it can be concluded that the data-collection allows for this to occur.

Diffey *et al.* (2001) employed the use of questionnaires and interviews from each of the two groups (Canada and Scotland). The questionnaire used open-ended questions covering the following:

- general reasons affecting decisions to continue language study
- environmental factors, such as the teacher's role, classroom anxiety, learning activities and learner input
- perceived relevance of ability and gender

The remaining five studies were all explicit in that the type of data collected specifically took account of pupils' perspectives and opinions. Hufton *et al.* (2002) used themes as the basis of the findings of the study: that is, pupil satisfaction, effort-ability attributions, peer influence and the value of education. The study explored issues of the nature of the pupils' school day; homework and the use of leisure time; their orientation towards learning and work; relationships with peers; self-perceptions of ability and work rate; the relative importance of ability and effort with regard to performance; the perceived value of education; and future vocational and life goals. Each pupil was asked about his or her academic progress and grades. The data were collected through face-to-face interviews. It is not clear, however, whether these were group interviews or one-to-one interviews. The interviews were semi-structured. The research team used non-native members for the interviews: that is, members of the Russian and American teams interviewed the Sunderland pupils. Two Russian interviewers acted as interpreters for the interviews with Russian children. Williams and Ivey (2001) used a case study method to investigate one pupil's attitudes to learning in a mathematics class. Daily sessions were videotaped and field notes were recorded by one of the authors three to five times per week for one school year. Project team members reviewed these tapes and verbatim transcripts were prepared for selected episodes. Two extensive semi-structured interviews were carried out, tape-recorded and transcribed verbatim.

Potter *et al.* (2001) focused upon writing, but sought pupils' perspectives on this type of undertaking in a school setting. One-to-one interviews (face to face or by telephone) followed the same pattern of open-ended questions based on self-perception of achievement, writing experiences, goals, processes, and strategies. Interviews were conducted by an individual known to the pupils and lasted 45 minutes. Slade and Trent (2000) utilised focus group interviews, involving discussion about the boys' own perspectives on the reasons for the low retention and achievement rates of the population in question. The data were used to identify, categorise and understand the general concerns of boys about education. The use of open-ended questions – with an emphasis on the researcher's genuine attention, listening and respect for the pupils' own opinions – was a strong factor in this study. Finally, Nardi and Steward (2003) considered pupils' prior, current and projected achievement in mathematics by seeking their opinions and perspectives. They used researcher observations which led to themes that informed subsequent group interviews.

4.3.5 Reliability and validity

Table 4.1 and table A.4.1 (Appendix 4.2) outline the reliability and validity factors relating to the data-collection and analysis of data. The qualitative nature of the studies does not lend itself to quantitative analysis of a statistical nature. Reliability and validation are largely based upon open and clear descriptions of the methods employed in the study.

4.3.6 Weight of Evidence (WoE)

All studies were felt to use appropriate data-collection and data-analysis methods that would allow, as far as possible, pupils to express their views and for the analysis to be grounded in the views of pupils. The data collection and methods of analysis were not always made explicit in the study reports themselves. However, it was implicit within the study report that sufficient consideration of these issues had been made. Only one study (O'Grady, 2003) actively involved the pupils in the design and conduct of the study. There is therefore an issue that has emerged from this review that relates to the extent to which research into pupil voice is still controlled and dictated by the research agenda rather than the views of pupils.

Table 4.1: Assessment of subject centeredness of studies (i.e. pupil voice)

	Diffey <i>et al.</i> (2001)	Griffard and Wandersee (1999)	Hufton <i>et al.</i> (2002)	Nardi and Steward (2003)	O'Grady (2003)	Potter <i>et al.</i> (2001)	Slade and Trent (2000)	Williams and Ivey (2001)
Used appropriate data-collection methods for helping pupils to express their views	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Used appropriate methods for ensuring the data analysis is grounded in the views of pupils	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Actively involved pupils in the design and conduct of the study	No	No	No	No	Yes	No	No	No

Studies were given a rating on a three-point scale in each of the categories of weight of evidence: that is, the quality of the study (weight of evidence A), the appropriateness of the study's design for this specific in-depth review question (weight of evidence B), and the relevance of the focus of the study for this in-depth review question (weight of evidence C). These weights of evidence, together with the overall weight for each study (weight of evidence D), are summarised in Table 4.2 (see also Appendix 4.2, Table A.4.1)

Table 4.2: Weights of evidence assigned to studies

Authors	WoE A	WoE B	WoE C	WoE D
Diffey <i>et al.</i> (2001) Language learner motivation: comparing French class attitudes of Scottish and Canadian secondary pupils	medium	medium	medium	medium
Griffard and Wandersee (1999) Challenges to meaningful learning in African-American females at an urban science high school	high	high	medium	medium
Huften <i>et al.</i> (2002) Educational motivation and engagement: qualitative accounts from three countries	high	high	medium	medium
Nardi and Steward (2003) Is mathematics T.I.R.E.D? A profile of quiet disaffection in the secondary mathematics classroom	high	high	high	high
O'Grady (2003) Motivation in religious education: a collaborative investigation with year eight students	medium	high	medium	medium
Potter <i>et al.</i> (2001) Academic and life goals: insights from adolescent writers	medium	medium	medium	medium
Slade and Trent (2000) What the boys are saying: an examination of the views of boys about declining rates of achievement and retention	high	high	high	high
Williams and Ivey (2001) Affective assessment and mathematics classroom engagement: a case study	high	high	high	high

Whereas the framework in table A4.1 (Appendix 4.2) shows validity and reliability in Nardi and Steward (2003) to be lacking, the weight of evidence (WoE A) has been given a high rating despite this. The reason for this is the qualitative nature of the reports. Whilst reliability and validity were not explicitly reported, it is clear from the reports that these were addressed. O'Grady (2003) is also shown to be lacking in terms of validity and reliability, but there was insufficient information provided in the paper to make a judgement as to whether or not these were actually addressed.

4.4 Synthesis of evidence

What do secondary school pupils believe affects their motivation to learn in the classroom (or school)?

4.4.1 Synthesis of findings and conclusions from the eight papers in the in-depth review

Details of the coding process used to identify the six themes identified in the individual studies are given in Appendix 4.3. The six themes and their respective components are summarised in Box 1.

Box 1: Six themes identified by study authors

The role of the self encompasses:

- pupils' goal orientations
- pupils' satisfaction with current performance
- self-efficacy
- affective decision-making

Utility encompasses:

- perceived usefulness of the curriculum and school in general and authenticity

Pedagogy encompasses:

- how much lessons were enjoyed and perceived as fun by the pupils
- the types of activities that they preferred
- the characteristics of a good teacher
- how the actions of teachers could influence pupil motivation

The influence of peers encompasses:

- how young people viewed their peer group
- how young people were viewed by their peer group

Learning encompasses:

- pupil effort
- cognitive passivity
- how learning habits were influenced by teachers

Curriculum encompasses:

- content
- grades

How the themes were reflected in the different papers

The information from this synthesis has been summarised in Table 4.3, which illustrates that some studies address more of the themes than others, while some studies concentrate more on particular themes.

Table 4.3: Six aspects of motivation reflected in the eight papers in the in-depth review

	Diffey <i>et al.</i> (2001)	Griffard and Wandersee (1999)	Hufton <i>et al.</i> (2002)	Nardi and Steward (2003)	O'Grady (2003)	Potter <i>et al.</i> (2001)	Slade and Trent (2000)	Williams and Ivey (2001)
Self		x		x		x	x	x
Utility			x	x	x	x	x	x
Pedagogy	x			x			x	x
Peers				x				x
Learning					x			x
Curriculum				x		x	x	

The role of the self

The role of the self included references in the studies to pupils' goal orientations, their satisfaction with current performance, self-efficacy and affective decision-making. Six of the eight studies in the in-depth review (Diffey *et al.*, 2001; Hufton *et al.*, 2002; Nardi and Steward, 2003; Potter *et al.*, 2001; Slade and Trent, 2000; Williams and Ivey 2001) address aspects of the self in their findings and conclusions. All three studies rated high in the overall WoE (D) address this theme with Williams and Ivey (2001) providing most information.

Of the six studies that looked at the role of self, three (Diffey *et al.*, 2001; Nardi and Steward, 2003; Williams and Ivey, 2001) suggest that pupils made decisions about how much to engage with the subject matter. Interestingly, two of these studies looked at pupil motivation in mathematics classrooms while the third concentrated on second language learning.

Williams and Ivey (2001) conjecture that, at some point, the pupil, Bryan, in their case study had made a 'negative affective assessment about mathematics' (p 95). 'Bryan interprets the happenings in the mathematics classroom in ways which affirm (or are affirmed by) his original assessment, over time reaffirming and re-conceptualising mathematics in accord with his initial assessment' (p 94). Nardi and Steward (2003) found that 'students make a conscious choice whether to work in lessons or not' (p 350) and engage with mathematical tasks out of a sense of 'obligation' (p 350). A suggestion came from the study by Diffey *et al.* (2001) where 'One exchange suggested that affective decisions override other factors such as how much they enjoy individual lessons. *I think if you don't like French you can't really be turned on to like it...if you don't like it to begin with then there's... nothing you can really do*' (p 177).

In addition, Williams and Ivey (2001) found that the repetitive nature of the work, and the predictability and emphasis on right answers in the mathematics class negatively affected Bryan's views of the subject and his motivation to work beyond the minimum necessary. Bryan 'saw no place for his own thoughts, his own way of thinking, or his opinions' (p 93). Bryan's need was for a 'place in mathematics to add his own opinions, to think his own way, and to do his own thing' (p 93). Detachment from what he views as a dehumanising activity is a reasonable response. 'Group work seemed to offer Bryan a place and the freedom to make his 'own unique contribution' and he became truly engaged in these activities' (p 93).

Certainly a notion of 'causal chains rather than simple causes' (p 86) were found to be at the root of motivation (Williams and Ivey, 2001). Believing that he had an innate preference for a subject directly related to Bryan's motivation: 'An innate preference for or against mathematics was one way that Bryan explained why he did not engage in mathematics, but other people did' (p 87). The influence of Bryan's parents was important: 'His parents' dislike of mathematics' (p 87) confirmed Bryan's own views. 'Bryan demonstrated volitional control by completing assignments that he found repetitive and boring, but volition did not lead to active engagement; he did the work only because he had to, and he only did enough work to 'get by' (p 92). Bryan saw mathematics as a requirement and was willing to make an effort, but engagement was at a minimal level. Bryan 'shows a somewhat ambivalent sense of self-efficacy for mathematics' (p 89). He knows he is good at some parts and less good at others. He viewed himself as being in 'the middle of the class' (p 89). He does 'just enough to remain in the middle of the pack' (p 89). Self-efficacy for Bryan is 'not indicative of his willingness to actively engage in mathematics' (p 89).

Goal orientation was examined by Williams and Ivey (2001), and by Potter *et al.* (2001). Both studies suggest that the oft-presented dichotomy between mastery and performance goals is too simplistic. In Williams and Ivey's (2001) case study, Bryan 'alternately expressed learning goals and performance goals, and he discussed ability and effort as related and equally important. To Bryan, ability without effort was useless, but effort without ability was a waste of time' (p 90). For Potter *et al.*'s (2001) subjects, 'a sense of awareness of, but independence from school standards pervaded the interviews of ...two high achieving students' (p 48). 'They described their teacher's writing standards as too simplistic and cynically tried to give her what she wanted, without valuing those standards' (p 49). 'Being a good writer was a strong long-term goal for these boys...but they did not perceive their school writing as instrumental in helping them to reach this goal' (p 49). This mastery goal was 'virtually dormant', while they 'more or less complied with school writing requirements with a 'performance orientation doing just what was needed to get by' (p 49). These students had a strong urge to develop as writers and as people on their own terms, and were thwarted by what they saw as the 'misguided requirements of their teachers' (p 50).

Hufton *et al.* (2002) looked at pupils' satisfaction with their current performance and found that this was related to teacher expectations and that there were cultural differences between the expectations made in Russia compared to either the UK or USA. Student satisfaction with their 'academic performance tended to be influenced both by grouping, curricular and assessment practices and by its relationship to perceived vocational opportunities' (p 282). The role of the teacher was seen to be more as an enforcer of academic engagement in the UK and USA than in Russia. Extrinsic motivation was found to have significant influence on

performance 'particularly where the individual identifies with the importance of behaviours concerned and perceives them as congruent with the wider value system' (p 278).

Finally, Slade and Trent (2000), in interviewing boys, found that some of the perceptions of the adult community about how boys see themselves and how this impacts on motivation in school were erroneous. In particular, they found that there was a notion among adults that boys were suffering from a masculinity crisis. However, 'there was very little discussion about any aspect of being male and its significance in education' (p 211). 'If there are problems concerning 'being male' in education, or in society generally, most boys don't see them' (p 212).

Summary of points:

- Pupils make decisions about school subjects as a result of a range of interconnected factors that occur over time.
- Once made, these decisions become the dominant influence on the levels of engagement.
- A belief in innate preferences for particular subjects can be confirmed by parental preferences.
- The dichotomy between performance and mastery goals is too simplistic.
- Group work appears to result in greater engagement by pupils.
- Teacher expectations impact on the effort expended by pupils on school related work.
- Boys interviewed in one study felt that the adult community held erroneous perceptions about how they saw themselves and how this impacted on their motivation to learn.

Utility

Utility refers to the perceived usefulness of the curriculum and school in general. In addition, it encompasses the idea of authenticity: in other words, how situated and related to the real world school learning situations appeared to the pupils. It was identified as relevant to the motivational profiles of pupils by five different studies (Hufton *et al.*, 2002; O'Grady, 2003; Potter *et al.*, 2001; Slade and Trent, 2000; Williams and Ivey, 2001). Two studies rated high on the overall WoE provided data on this theme (Slade and Trent, 2000; Williams and Ivey, 2001).

Six studies suggest that utility has an influence on motivation. These studies suggest that pupils do not always see the purpose or relevance of what they are learning. Nardi and Steward (2003), for example, found that 'students perceive mathematics of limited use in adult life' (p 351).

The boys interviewed by Slade and Trent (2000) suggest that utility was essential '*If I need it, I'll learn it. If I don't, I won't*' (year 9–11) (p 212). They found that, in general, most boys don't value school. 'It's more about getting credentials than learning...school for most boys is considered to be an unwanted means to an end that starts out being too distant and becomes increasingly unachievable' (p 214). School doesn't offer the courses that most boys want to do; largely courses and

coursework that *'get you ready for a job'* (p 214). The boys also felt that years 8, 9, and 10 wasted too much time.

For Hufon *et al.* (2002), there were cultural differences between Russian, American and British pupils in terms of the value they put on education and being educated. In Russia, it was believed to be important to be 'educated' but they identified a difference between vicarious and pragmatic utility. Pupils who perceived themselves as sufficiently successful in relation to their ambitions were more likely to invoke vicarious utility. 'These pupils accepted schooling as helping them to become useful, or saleable, in relation to their various levels of aspiration, in the future labour market' (p 280). On the other hand, less academically successful pupils cited pragmatic utility. They 'seemed unsure that they could become sufficiently useful by way of schooling to compete for any employment they desired' (p 280). Williams and Ivey (2001), however, suggest that the perceived usefulness of what was being learned was an influence on motivation but could not be assumed to be the cause of disengagement. 'Bryan incorporated his belief that mathematics was essential into nine separate responses...Such a perception of usefulness had no effect on his engagement with mathematics... Bryan presented a clear account of his view of the usefulness of mathematics but he still remained detached from the class and seldom actively engaged in mathematics' (p 90).

Potter *et al.* (2001) suggest that learning situations that were authentic – in other words, appeared real and relevant to the pupils – could positively influence pupil motivation: 'Why is it that students who couldn't or wouldn't write, suddenly begin to produce better texts, and begin to participate in class discussions? We suspect that the answer lies in the individual's feelings of efficacy and authenticity. Our students saw writing assignments as more 'real' when they had an idea they wanted to communicate to an audience, especially when tied to their career aspirations and their emerging beliefs about the world. They found the energy to write' (p 53). They also suggested that the assessment process is a way of increasing the authenticity of a classroom learning situation: 'Sharing the assessment process with students is another way to capture students' motivation...When students and teachers analyse pieces of writing together in an exchange of views, students can retain a sense of individual authority as authors and teachers convey standards of writing in an authentic context' (p 53). O'Grady (2003) also found that certain activities in the class could help the students make learning relevant to life. In particular, the study recognised that drama activities recreated existential situations.

Summary of points:

- Students appear to be more motivated by activities that they perceive useful or relevant.
- Even where students perceive a task to be useful, they are not necessarily motivated to go beyond the requirements of the specified learning task.

Pedagogical issues

Pedagogy encompasses the following references in the papers: how much lessons were enjoyed and perceived as fun by the pupils; the types of activities that they preferred; the characteristics of a good teacher, and how the actions of teachers could influence pupil motivation. Five of the studies address issues of

pedagogy (Diffey *et al.*, 2001; Griffard and Wandersee, 1999; Nardi and Steward, 2003; O'Grady, 2003; Slade and Trent, 2000). These five studies include two of the studies rated high in the overall WoE (Nardi and Steward, 2003; Slade and Trent, 2000).

The boys interviewed by Slade and Trent (2000) suggested that 'School work is boring, repetitive and irrelevant' (p 214). This was reiterated by Nardi and Steward (2003) who found that tedium in mathematics classes was a problem. 'Overall, the students seem to have a minimal appreciation and gain little joy out of their engagement with mathematics' (p 350). 'These students view mathematics as an irrelevant and boring subject, the learning of which offers no opportunity for activity' (p 351) and 'mathematical skills are seen as an isolated body of non-transferrable knowledge' (p 251). Slade and Trent's study went further to suggest that pupils feel that 'there are 'too many bad teachers who either create or exacerbate their problems' (p 214). 'The issue of trust and respect repeatedly appears in the focus group discussions. Most boys talked of the difficulty and often impossibility of establishing a relationship of trust with adults' (p 213).

The boys in the Slade and Trent (2000) study usefully offered suggestions about what would be helpful to them in terms of learning: 'The best classroom environment is one in which there is the conjunction of diversity and the kind of good teacher who is comfortable with difference and is not troubled by the riddle of relativity and its application in teaching practice' (p 218). 'A good teacher, it seems, is one who is involved enough to be contextually flexible or pluralistic; someone who accepts the rhetoric of education, in practical, if not theoretical ways, particularly the importance it places on the relativity of identity, knowledge, truth and value' (p 213). 'The boys emphasis consistently and uniformly returns to the teachers as the primary factor; the one that must be changed before any of the others can be changed; the one which by changing will change all of the others' (p 221). 'Basically, the boys believe that by changing the teachers you have already changed the curriculum. In other words, the curriculum turns out to be what actually happens in the classroom and learning turns out to be what the participants actually take away with them and use' (p 222). 'For most boys, school is focused on preserving the status quo, which makes it culturally out of date and paradigmatically inflexible. It remains detached from the real world, distant from the rest of their lives, and neither convincingly forward looking, not plausibly concerned with the need to prepare students for a place within the emerging society' (p 215). 'School is about preparing you for adult life, but adult life gets in the way of school; culturally celebrated achievements and rites of passage into adult life' (p 215). 'The adult world is not listening' (p 214). 'Teachers would understand more if they would "just listen to you" and recognise all of the things that are going on' (p 211).

Both O'Grady (2003) and Diffey *et al.* (2001) suggest that how much pupils enjoy the lessons will impact heavily on their motivation to learn. In O'Grady's study, for example, the students contrasted RE methodology with the methodology of other lessons, 'The more varied methodology increased the impact of the lessons' (p 219) and the students felt that '*we get to learn in a fun way*' (p 219). Diffey *et al.* (2001) confirm that 'A common reason given...for continuing language courses was '*if you've enjoyed it or not*' (p 177). However, Diffey *et al.* (2001), and Williams and Ivey (2001) would suggest that simply enjoying lessons is not the whole story.

Certain activities were more highly praised than others. The students in O'Grady's (2003) study enjoyed the engagement, creativity and imagination involved in drama activities: 'In drama, you get to express your feelings in actions' (p 220). The students were keen to be involved in topic and lesson planning: 'This gave a sense of willing participation' (p 220) as 'some students spoke of gaining control, within limits' (p 220). In Diffey *et al.* (2001) the '*fun French things*' were things such as 'matching pictures and words, watching TV, dice games, and lotto' (p 177). 'Activities which tend towards the communicative end of the range are preferred over those that focus on more formal language learning, namely the 'four skills' and grammatical knowledge' (p 177).

For the pupils in Diffey *et al.*'s (2001) study, formal exercises reduced pupils' interest. In a similar vein, Nardi and Steward (2003) suggest that rule and cue following (rote-learning) caused a problem in mathematics: 'Several students in this study seem to experience mathematics as a set of rules that suggest unquestionable and unique methods and answers to problems' (p 354). 'Beneath this dissatisfaction with mathematics as dry proceedings lies, perhaps, a longing for deeper, more essential understanding and for engagement with mathematics that goes beyond...a following of cues provided by the teacher' (p 355). Nardi and Steward further suggest that group work is a key way to engage pupils and prevent isolation in mathematics classes: 'More than other curriculum subjects mathematics is perceived by the students in this study as an isolated subject where little opportunity is on offer to work with peers' (p 352). Students expressed a 'clear preference for collaboration and group work...Students appreciate a teacher who uses group activities' (p 353). 'Students appreciate a friendly learning environment and being with their friends' (p 353).

In general, Diffey *et al.* (2001) suggest that pedagogy should be comprehensible and authentic: 'In classroom interactions, the ability to comprehend is clearly linked to social competence' (p 179). 'Authenticity, whether of language, situations or resources, measures the proximity of the classroom experience to real life... Suggestions were forthcoming in both settings for authentic classroom activities' (p 180).

Summary of points:

- Some pupils perceive school work as boring and repetitive.
- Pupils perceive that a teacher's approach, attitude and enthusiasm influence their engagement.
- Pupils appear to be more engaged with lessons that they perceive to be fun.
- Pupils appear less interested when classroom activity takes a formal passive form.
- Pupils express a preference for collaborative work.
- Authentic learning tasks are more likely to cognitively engage pupils

The influence of peers

This theme covered aspects of motivation that related to how young people viewed and were viewed by their peer group. Three studies provide data relating

to the influence of peers (Diffey *et al.*, 2001; Hufton *et al.*, 2002; Slade and Trent, 2000). Two of the studies (Diffey *et al.*, 2001; Hufton *et al.*, 2002) were comparative studies across cultures. Most information on this theme was provided in the study by Slade and Trent (2000), which was also the only paper of the three to be rated high in the overall WoE, with the other two papers rated as medium.

Hufton *et al.* (2002) found cultural differences between Russian pupils and pupils in both the UK and USA. High achievers were respected and seen as an asset by their peers in Russia. However, in the UK and USA, the key issue was whether or not the behaviours of the high achievers differed from norms of wider peer culture. The more they differed, the more likely that pejorative terms were used to describe them. Slade and Trent (2000) also addressed the issue of whether or not it is 'cool to be clever' and found that the boys they interviewed also emphasised the peer cultural dimension as being critical. The boys felt that it was perfectly acceptable to be clever but it was not cool to be 'anti-social sometimes to the point of being offensively elitist' (p 213). 'In general, the boys interviewed admired cleverness' (p 214). 'The real nerds, it is claimed, bring it upon themselves by being deliberately and often aggressively anti-social, sometimes to the point of being offensively elitist' (p 213).

In Slade and Trent's (2000) study, the boys 'talk of trust and respect being established between themselves in a range of ways, some of which involve 'paying out.' Others are more physical, like pushing, shoving, messing up hair or clothing, and so on. They also talk of how teachers and school rules 'get in the way' in these communicative social matters' (p 213). 'School presents too many contradictions and too many debilitating paradoxes' (p 214). For example, 'school expects adult behaviour but doesn't deliver an adult environment' (p 214).

Diffey *et al.* (2003) also felt that the social dimension was important to pupils. 'The [foreign language] class can pose a threat to social competence leading to a phenomenon well recognised in the research as 'foreign language anxiety' (p 175). In interviews, frequent reference was made to a particular form of anxiety for adolescents, that of appearing foolish (p 175): 'When it comes to motivating pupils of this age, self-esteem is clearly one consideration the teacher cannot ignore' (p 176). 'Adolescent pupils in particular may need to experience social success in their target language interactions' (p 176).

Summary of points:

- Being perceived as clever appears to be socially acceptable and a source of social respect amongst peers. However, if 'cleverness' is combined with other characteristics that transgress peer group norms and values, then it is perceived to be less acceptable.
- Pupils perceive that the norms and organisation of 'school' interfere with other more desirable forms of peer group interactions.
- Pupils frequently expressed the importance of not being made to appear foolish in front of their peer group.

Learning

Some of the findings and conclusions of the studies related to how much effort pupils expended on learning, the dangers of cognitive passivity, and how learning

habits were influenced by teachers. Three studies addressed issues of learning (Griffard and Wandersee, 1999; Hufton *et al.*, 2002; O'Grady, 2003). None of these studies was rated high in the overall WoE (D).

Hufton *et al.* (2002) found that pupils saw ability as 'performative rather than innate' (p 275). In other words, abilities could be developed and improved as a result of effort in the learning process. This included how much homework was done and how much studying was undertaken in the pupils' own time. There were cultural differences between Russia and the UK/USA. While ability was viewed as an outcome of effort by the pupils in all three countries, UK and USA students were not prepared to go beyond what was demanded of them. Thus effort seemed to be directly related to the expectations and demands of both teachers and the wider community, including peers and parents. Russia had a culture where a great deal of effort was expected of school students and they, by and large, responded to this. In the UK and USA, much less was expected and the pupils seemed to think that the amount of effort they were expending was adequate for a school/social life balance that they could live with.

The findings by Griffard and Wandersee (1999) suggest that, for the students observed and interviewed in their study, there was a tendency towards effort, but a lack of cognitive engagement. The completion of assignments does not equate to learning. 'What is missing is cognitive engagement, which is avoidable when assignments can be completed without significant cognitive effort' (p 623). Simple activity does not equate to learning. 'All of the teachers observed employed hands-on activities, but none pressed their students for cognitive engagement while doing it' (p 623).

Thus, a theme that emerged is that, 'although [the students] have developed a discipline of doing their schoolwork, and their teachers provide abundant hands-on experiences, there is no evidence that these have led automatically to robust learning about the topics' (p 623). As with Hufton *et al.* (2002), there was a direct relationship between cognitive engagement with the subject matter and teacher expectations. The result of over-emphasis on activity resulted in cognitive passivity for the pupils.

One reason it is difficult for a teacher to get all students cognitively engaged is because it requires placing uncomfortable pressure on the students to participate (p 624): 'Teacher tolerance of students' cognitive passivity and their belief that doing begets learning mutually reinforce each other' (p 625). One of the most worrying aspects of this finding by Griffard and Wandersee (1999) is that the '...students showed signs that they did not know when they did not know. They had not developed significant self-monitoring habits, and they instead relied on their teachers to feedback whether they have learned the information' (p 628). 'They have not learned how to learn' (p 628). '...a shortage of metacognitive awareness with both girls had been observed' (p 629).

O'Grady's study (2003) offers some insight into countering this problem since the methods utilised in the study resulted in pupils describing 'the experience of increased self-understanding, through interpretation' (p 220). 'My students pointed to several aspects of engagement. One was collaboration with other students, sharing ideas and solving problems. A second was a varied methodology, avoiding a monotonous diet of teacher-directed written work. A third was that active, experiential work, for example drama, was engaging' (p 221).

Summary of points:

- Pupils believe that effort is important and can make a difference.
- Pupil effort appears to be influenced by the expectations of the teacher and expectations of the wider community.
- Pupils suggested that increased self-understanding came from collaboration, varied methodology and active, experiential work.

Curriculum

Two studies, both rated high in the overall WoE (D), provide information relating to the curriculum. Mathematics, according to Nardi and Steward (2003), contributes to pupil isolation more than other subject areas, and is perceived as an elite subject by pupils.

Two studies suggest that the curriculum can also impact on the motivation of pupils. Slade and Trent (2000) suggest that the curriculum does not recognise or value the abilities of some pupils and as such some pupils have an 'unrecognised CV' on leaving school. The paradoxical dilemma of education is that 'they have to stay in a place that they believe they can't stay in, doing work that they believe is of no value, in order to get qualifications that they believe do not accurately measure their ability, but which they will need if they are to get the chance to demonstrate their real ability to "learn on the job"' (p 224). 'The boys seem to be aware of their achievements, and aware that the adult world, particularly the world of education, affords them little or no recognition. In its place, they find themselves systematically excluded from being seen as achievers' (p227).

Nardi and Steward's (2003) findings criticise the mathematics curriculum in three ways. First, the curriculum in mathematics isolates pupils: 'More than other curriculum subjects, mathematics is perceived by the students in this study as an isolated subject where little opportunity is on offer to work with peers' (p 352). Second, the mathematics curriculum, and the way it is taught, sends the message that it is an elitist subject accessible only to some: 'The students participating in this study seem to perceive mathematics as a demanding subject in which only exceptionally intelligent people can actually succeed. In this frame of thinking, engagement with mathematics is fraught with the risk of exposing weaknesses in the students' intelligence and worsens the students' image of their own intellectual capacity' (p 357). 'A worryingly high number of students, and within the context of this study at least, an overwhelmingly high number of almost exclusively female students... express rather fatalistic views on mathematical ability as innate' (p 358).

Stratification of ability through setting seemed to be the major environmental source of influence on the students' self-image of mathematical ability (p 358). 'The students find this strictly hierarchical, elitist mathematics resistible and the blows to their mathematical confidence often painful' (p 359). 'The students express their alienation from this depersonalised, deterministic mathematical experience' (p 359). Third, the pupils find mathematics a deeply impersonal subject: 'The students in this study repeatedly and in various forms expressed their appreciation for a learning environment that cautiously caters for their individual needs' (p 359). 'The role of a teacher...emerged as paramount and

possibly transcended, in the students' views, the importance of scheme, textbook or activity used' (p 360).

Potter *et al.* (2001) suggest that grades in school are an important aspect of pupil motivation. The assessment system in use can affect pupil motivation. Potter *et al.* (2001) found that 'almost all of the students viewed grades as the 'bottom line' in the determination of school success and as important representations of themselves' (p 48). Once again, however, it is not a simple one-to-one relationship as 'most of them also retained a sense of themselves as writers that was independent of school definitions' (p 48). 'Some students expressed enthusiasm for, and personal motivation to meet the demands of school writing, while others described their more or less grudging compliance, but in almost all cases, developmental and societal concerns interacted with assignment related goals' (p 48). The authors suggest that one way of positively affecting pupils' motivation is to share 'the assessment process with students ... When students and teachers analyse pieces of writing together in an exchange of views, students can retain a sense of individual authority as authors and teachers convey standards of writing in an authentic context' (p 53).

Summary of points:

- Some pupils perceive the curriculum to be restricted in what it recognises and values as student achievement.
- Curricula can isolate pupils from their peers and from the subject matter.
- The way that the curriculum is mediated can send messages that it is not accessible to all.
- The way that assessment of the curriculum is constructed and practised in school appears to influence how pupils see themselves as learners and socially.

4.5 Nature of actual involvement of users in the review and its impact

As mentioned in section 2.1.1, involvement of users in the review was important. As members of the Advisory Group, users were involved in shaping the review question, drafting the protocol and contributing to the review process.

The pupil representative on the Advisory Group was a key player in the review. The preliminary findings were presented together with details of methodology of the review. This allowed the pupil representative to assess the findings in relation to his own experience in school. An electronic discussion provided further development of these issues. He commented on the usefulness of the review in highlighting the power of pupil voice when it is truly sought and heard.

5. FINDINGS AND IMPLICATIONS

5.1 Summary of principal findings

The review set out to answer the specific question about what pupils, aged 11–16, believe impacts on their motivation to learn in the classroom. This chapter summarises the review process and draws together the main findings. As the review findings are derived from a small number of studies, the following conclusions are cast in tentative terms.

5.1.1 Identification of studies

The search strategies used are detailed earlier in the report (see Chapter 2). Broad and extensive searches on motivation were undertaken and identified a potentially large number of studies.

Following the application of inclusion and exclusion criteria and the keywording process, it became clear that there was only a small number of studies that report on ‘pupil voice’ directly (i.e. through interviews) and would therefore be included.

5.1.2 Mapping of all included studies

Application of the EPPI-Centre keywords and the additional review-specific keywords to included studies highlighted that the majority of studies included in the map concentrated on findings from questionnaires where pupil voice had been determined by the questions posed. The Review Group felt that this would not necessarily reflect pupil voice and opinion, and so it was decided that these studies would be excluded from the in-depth review.

5.1.3 Nature of studies selected for in-depth review

Through the application of a second stage inclusion and exclusion criteria, the Review Group was able to sift through the studies in the systematic map until eight were identified for inclusion in the in-depth review. All the studies have at their core ‘pupil voice’ (through interview) in relation to motivation in the classroom. More detailed descriptions of the eight studies included in the in-depth review can be found in Appendix 4.1.

Implications of findings are presented in three sections: findings related to policy; findings related to research and the use of underpinning theories; and findings related to practice.

5.1.4 Synthesis of findings from studies in the in-depth review

Impact of weight of evidence (WoE)

Overall, there seemed to be little difference between studies rated high (studies 2, 4 and 5) in the overall WoE (WoE D) and those rated medium (studies 1, 3, 7, 8 and 9).

The studies by Potter *et al.* (2001) and O'Grady (2003) provide less information with which to work: the papers were simply not substantive enough in length to be able to do this. All of the studies rated as medium contribute data to at least three themes. There was also no discernable difference between the papers rated high and the papers rated medium in terms of the themes that were addressed, although those studies rated high provide more data on pupil voice than those rated medium. However, it was one of the papers rated as medium for WoE(D) that was the only study to have actively involved the pupils in the design and conduct of the study.

The six themes emerged from studies that focused on pupils' own views of what motivates them to learn in the classroom. The summary of points from the synthesis can be found in Appendix 4.4

The role of the self

Unsurprisingly perhaps, the role of the self is the most frequently occurring theme throughout the studies. Harlen and Deakin Crick (2002) suggest that many aspects of the 'self' contribute to one's motivational profile as it embraces self efficacy, self regulation, interest, locus of control, self esteem, goal orientation and learning disposition. In line with this emphasis, motivational factors relating to the self were found in seven of the eight studies.

In the Williams and Ivey (2001) study, Bryan (the pupil studied) believed that he had an innate preference against mathematics and that this was confirmed for him by the fact that his parents also disliked mathematics. The researchers suggest that this belief overrides individual factors relating to motivation on which previous literature has concentrated. Bryan, for example, does not perceive himself to be poor at mathematics and does enough to maintain his place in the middle of the class. It is suggested, however, that Bryan's affective decision about mathematics has been made as a result of his previous experiences of mathematics learning. These have culminated at some point in his decision that mathematics is not for him. This decision has been reaffirmed subsequently by his experiences in mathematics classrooms where he is given little opportunity to personally engage with the subject matter.

Williams and Ivey (2001) and Potter *et al.* (2001) address goal orientation as a factor affecting motivation. In the Williams and Ivey (2001) study for example, Bryan expressed both learning goals and performance goals, that is, the view that both ability and effort were important. Potter *et al.* (2001) found that all pupils in the study viewed good grades as a primary goal but that obtaining a good grade in writing was contradictory to what they believed representative of good writing qualities. These pupils had prioritised performance goals in their school work despite having mastery goals for their writing outside school. For the boys in this study there was a contradiction between school standards in writing and their own standards.

The issue of pupil beliefs is often presented in the literature as binary. The holding of one belief as opposed to another, both of which are polarised at either ends of a continuum, can explain pupil behaviours and motivational levels. However, the findings of these studies would imply that the relationship between particular sets of beliefs and motivational behaviours is not a simple one. Pupil beliefs are more likely to be part of a complex set of factors that will combine to create a particular motivational profile.

There is a suggestion in two of the studies that the extrinsic/intrinsic dichotomy identified in the literature on motivation is too simplistic and that both in fact have a place. The themes of authenticity (extrinsic) and self (intrinsic) are two of the most frequent themes to emerge from the studies, with both being identified as important issues by seven of the eight papers. Rather than motivation being determined by one or other (extrinsic or intrinsic) the relationship between the two is more reciprocal. For example, giving pupils opportunities to make their 'own unique contribution' (Williams and Ivey, 2002) may be more likely to cognitively engage pupils in the learning process. Equally, an over emphasis on behaviour over learning (Griffard and Wandersee, 1999) may lead to cognitive passivity. As suggested in section 1.3 of this review, the result of this passivity may be a loss of interest in the curriculum and the curtailment of opportunities for becoming creatively involved in the learning process (Kohn, 1993).

The work by Slade and Trent (2000) suggests that educational responses to perceived disaffection and disengagement from learning have concentrated on 'fixing up the boys' (p 211). According to the boys in the study, this is the wrong focus and it is suggested that a more ecosystemic approach, which accounts for contradictions, inadequacies and paradoxes in the system, would be more appropriate.

Slade and Trent (2000) also suggest that too many assumptions are being made by the adult community about what motivates boys in particular, to learn. In interviewing boys they found that they do not recognize the same problems and feel that they are not listened to. This would suggest that there is not enough research being carried out that forefronts pupil voice (as opposed to response to the research community's preconceived ideas). The very fact that only eight studies could be identified for this in-depth review and only three of these could be rated high in terms of overall WoE(D) would confirm this finding.

Utility

Hufton *et al.* (2002) and Williams and Ivey (2001) suggest that implicit beliefs were of key importance. Pupils in the Hufton *et al.* study believed ability to be performative rather than innate although, counter to the prevailing literature on the subject, this did not always result in a concordant expenditure of effort. The amount of effort pupils exerted on school learning is, it was suggested, more closely related to the expectations of others (teachers, peers and parents) and to the importance placed on other aspects of their lives i.e. outside interests such as sports. In particular Hufton *et al.* found that cultural differences existed and that pupils in the UK and USA were unprepared to go beyond what was expected of them.

The studies identified that the way pupils perceived a subject and how much they engaged with learning in these classes was strongly related to its perceived usefulness. The one exception to this was the study by Williams and Ivey (2001)

which suggested that Bryan's perception of usefulness had little effect on his engagement with mathematics and that the overriding factor was his affective decision that he had no innate preference for mathematics.

Pedagogy, learning and curriculum

The way that teachers organise pupils for learning, how they assess pupil progress and the extent to which pupils are involved and have control over the learning and teaching process were perceived by pupils to exert an influence on their motivation. It would appear that the pupils are more likely to engage when more participative teaching approaches are utilised in the classroom. Rote learning and the repetitive nature of some classes led to quiet disaffection and minimal engagement. Equally, teachers concentrating too much on behaviour rather than cognitive engagement are likely to encourage cognitive passivity. Two papers (Nardi and Steward, 2003; Williams and Ivey, 2001) looked at mathematics learning and concurred in their findings that the children studied gained little 'joy' from mathematics. This, they concluded, was related to the fact that there were few if any opportunities for personal engagement with the subject matter which was presented as a set of unquestionable set of rules. This is in line with a review of research by McCombs (1993) where it is suggested that learners of all ages are self-motivated on tasks they see as being interesting, fun, personally meaningful or relevant in some way.

Pupils expressed a preference for more participative approaches to learning. However, it was argued in some studies that participation in and of itself is not sufficient for cognitive engagement. The study findings suggest that cognitive engagement may be more likely when pupils participate, are afforded a sense of agency in the learning process and when teachers emphasise these factors over discipline and behavioural issues.

Pupils clearly perceive teacher/pupil relationship to be as important as pedagogy and teacher expectations. Pupil responses suggest that where they are made to feel isolated there is a risk of disengagement and/or disaffection. This would suggest that teachers who recognise pupils as individuals and offer them opportunities to influence the direction and process of learning are more likely to provide experiences for pupils that permit their natural disposition towards learning to emerge (Atkinson *et al.*, 1990; Maslow, 1970; McCombs, 1993).

Thus what teachers do in the classroom, how they relate to pupils and the extent to which they involve pupils in the learning process is, according to the pupils, crucial in affecting their motivation to learn a subject.

The influence of peers

Pupil motivation, however, is not solely dependent on what happens in the classroom. External influences, such as the norms of the wider peer culture, parental reinforcement, leisure interests, home life and work commitments can either support school goals and procedures or contradict them. This then impacts on the motivation that pupils have for school learning. Equally, at school their peer group is an important influence. However, contrary to what might be regarded as popular opinion, high achievers are ostracised only if they also deviate from cultural norms. More importantly for modern languages (Diffey *et al.*, 2001), a key problem was the fear of appearing foolish in front of peers as this can pose a threat to social competence.

Other

The findings of this review support the construction of motivation as a complex, multi-factorial concept. The eight studies identified many separate influences on motivation. This would therefore lend weight to the idea raised in the study by Williams and Ivey (2001) that ‘causal chains rather than simple causes’ (p 86) are at the root of motivation. This would suggest that rather than simply conceiving of pupils as being motivated or not, the concept of individual motivational profiles might be more appropriate. This would allow for a range of influences to be identified and accounted for when trying to understand, and indeed alter, a pupil’s cognitive engagement pattern with particular elements of school learning.

One or two conclusions from the studies are worthy of attention but did not fall into the themes described above. Slade and Trent (2000) strongly suggest that motivation is ‘not that simple’. This is echoed by Williams and Ivey (2001) who suggest that motivation is ‘a result of causal chains rather than simple causes’ (p 86). The very range of influences related to motivation covered by the eight studies in the in-depth review would lend weight to the idea, introduced in the conceptual map of this review, that motivation cannot be conceived of as a single entity.

Nardi and Steward (2003) suggest that pupil beliefs about mathematics are influenced by the way that pupils are organised for learning in the subject. Setting pupils on the basis of attainment led pupils to believe that success in mathematics was dependent not on hard work but on innate ability. On the basis of this belief pupils were found to make conscious decisions about whether to work in lessons or not. A substantial body of research on the merits of setting as an organisational tool for effective teaching would lend weight to the idea that there are drawbacks to setting as a way of grouping pupils for learning. It has been established, for example, that girls can be demotivated by a fast pace and pressure to succeed (Boaler, 1997a, 1997b, 1997c). In addition Ireson *et al.* (2002) found that pupils in top sets suffer because the fast pace and heightened focus on coverage of the curriculum means that they cannot do things in depth.

The studies also confirmed the suggestion made in section 1.2 of this review that there is a difference between disengagement and disaffection. Some pupils in the studies were clearly disaffected but still engaged in the learning process. This was the case, for example, with Bryan in the Williams and Ivey (2001) study. Others – for example the girls in the Griffard and Wandersee (1999) study – were convinced of the worth of science learning but were not cognitively engaged with the learning process.

Finally, Williams and Ivey (2001) suggest that the theoretical underpinnings of studies into motivation have for too long been embedded within a paradigm that concentrates on within-individual issues at the expense of wider, more environmental and cultural issues. The call in this paper is for a new paradigmatic approach to research into motivation that accounts for these wider issues. Traditional, scientific approaches in the context of human activities are contrasted with the need to move away from ‘material and efficient causes’ towards approaches that admit the possibility of final causation in the study of human behaviour. The authors suggest Logical Learning Theory (LLT) as one such approach.

5.1.5 Conclusion

The findings from this review should be treated with caution. There are only eight studies included in the in-depth review and five of these were rated only as medium in the overall WoE (D). In addition, many of the studies offer analysis and conclusions that combined pupil voice with other findings such as observations, teacher interviews and questionnaires. While a range of points (see appendix 4.4) are made in the synthesis it must be accepted that hard conclusions cannot be claimed for a synthesis of only eight studies. However, some interesting points are raised which are worthy of further consideration and investigation by researchers and practitioners.

Six themes were identified from the studies as key to motivation. These themes are presented in the order of frequency with which they were identified by the studies in the in-depth review:

- role of the self
- utility
- pedagogy
- learning
- peer-group influences
- curriculum

These themes encapsulate the wide range of influences identified by the eight studies in the in-depth review. The wide range of influences would suggest that motivation is not a simple or binary concept. Instead, it is argued that these findings lend weight to the construction of motivation, and indeed demotivation, as the product of causal chains rather than single causes.

It is also suggested that these causal chains help pupils to make affective decisions about particular subject areas. Once these decisions are made, they are used to evaluate and assess subsequent interactions with similar learning topics or situations. If the affective decision is negative, disaffection is likely to occur. The extent, however, to which the pupil disengages will depend on other factors related to motivation e.g. utility.

The review findings suggest that what happens in classrooms can make a difference; teachers can impact both positively and negatively on pupil motivation. Teacher expectations can be too low; there can be overemphasis on activity at the expense of cognitive engagement. The good news is that the activities that pupils claim to enjoy are the very ones that appear to be more likely to result in cognitive engagement rather than passivity.

While what teachers do would appear to impact on pupil motivation, it is not the only influence. This review would suggest that factors external to the classroom and the school also have an impact; for example, parental opinions of subject matter and the wider cultural view of the worth of education. Thus while teachers can make a difference, both positively and negatively, they may not be able to change the motivational profiles of disaffected and/or disengaged pupils by themselves.

The narrowness of definition of pupil voice which was adopted restricted the number of studies identified. This might suggest that there is a lack of suitably robust studies with a focus on pupil views available (as defined in this review).

While there were many studies that used questionnaires and interviews to gather pupils' responses to pre-identified traits of motivation, only eight could be identified that concentrated on pupil voice. Even then, only one study in the in-depth review actively involved pupils themselves in the design and conduct of the research.

5.2 Strengths and limitations of this systematic review

The strengths of the review are the systematic approach and the membership of the Review Group which provided a broad base of experience. The review has been wide-ranging and has provided the initial evidence for considering pupils' views in relation to motivation.

The particular question for this review arose from an interest in the relationship between motivation and learning. The review question was conceptually complex. This was a strength in that it allowed the Review Group to pull together a range of work related, explicitly or implicitly, to the nebulous concept of motivation.

The searching strategy employed aimed to be systematic in covering as many sources as possible and then recording the process. However, no searching can ever be totally comprehensive and the absence of searches on databases from, for example New Zealand or developing countries, is certainly a limitation of the study. In addition, while there was good reason to limit the search, work undertaken prior to 1998 was not included in the review.

Although a large number of studies were identified at the mapping stage, the majority of these studies do not report directly on 'pupil voice'. In contrast there are many studies that asked for pupil response to predetermined questions and issues. This focus on pupils' views relating to motivation enabled an exploration of the issues as perceived by the pupils themselves and thus we rejected these 'response' type studies that had parameters defined by the researchers rather than the pupils. Many of the studies sought to elicit pupil responses through questionnaires, thus the researcher had set the agenda and this gave rise to the possibility of pupils not being able to articulate their own thoughts and feelings related to motivation. The decision to concentrate on interview data was a way of ensuring that an exploration of agendas set by the pupils themselves was undertaken. This resulted in only eight studies being included in the in-depth review.

Even in those studies included in the in-depth review, the reporting of primary data relating to pupil voice was weak. In most of the studies pupil voice was implicit and embedded within other data to offer overall findings and conclusions. It was difficult, therefore, to distinguish between findings and conclusions based solely on pupil voice and those based on pupil voice and/or researcher observations and/or teacher voice. This made the synthesis of data into themes particularly difficult and overly reliant on author interpretation.

The variety of study type, sample sizes, sample selection procedures, and focus also made the synthesis of data very difficult. However, in some sense this was also a strength of the review. The themes that were identified crossed study type,

sample issues and focus and it could be argued that consistent pupil views have emerged despite the variety of studies that were included.

Perhaps, in the end, it has to be acknowledged that in searching for pupils' views, a range of different influences will inevitably be highlighted. As with any other group (parents, teachers etc.) there is rarely one viewpoint that represents them all. A major strength of this review is that pupil views have been brought to the fore. The process has highlighted the lack of studies devoted to pupils' views of what motivates them to learn. In addition, the studies that do exist have a tendency to embed such data into findings and conclusions. As such it is difficult to separate data gathered directly from pupils and other data gathered as part of the larger study. There is a clear need for more work in this area to be undertaken.

Future systematic review topics

There are a number of topics arising from this review that suggest themselves as potentially interesting and enlightening subjects for future reviews. In addition, systematic methodology lends itself to extension at least through a judicious selection among those areas that were used to mark out the scope and range of this review.

In this review, we limited our research to young people of compulsory secondary school age (i.e. 11–16). This allowed us to gather research on the feelings, opinions and perceptions of young people in schools as they are in the process of experiencing it and at a point at which they might be most able to articulate them. Perhaps an interesting extension to this study would be to look at older learners' views of what motivated them in schools in order to provide a more reflective perspective. Equally, a systematic review of research involving younger learners, especially those on the verge of transition might provide other interesting beliefs concerning motivation. Taken together, such a suite of reviews would represent views on motivation from future, present and past perspectives.

Whilst we limited this review to motivation in mainstream secondary schools, we are aware that much valuable data could be available elsewhere. In particular we are aware that much good work takes place in special schools. Similarly, a systematic review of research into motivation in primary education would enhance our knowledge of the field.

In this review we were anxious to contain our search to those pieces of research in which pupils' actual words were reported rather than an interpretation of pupils' points of view through analysis of a questionnaire or observation schedule. Consequently, we excluded a great deal of material using these instruments. However the notion of what constitutes pupil voice and how it is heard is contestable and a systematic review of these reports would be a useful addition to the series.

Similarly, whilst we limited our review to motivation in the classroom, there is a body of research material relating to motivation in other contexts, some within school and some extra-curricular. A systematic review of this material would allow comparison between classroom and other contexts.

On the question of voice itself, another interesting possibility arises. A review of the literature and research into research methodologies and instruments aimed at

eliciting voice could help in the development of a more rigorous methodology for this purpose.

A significant result of this review is the identification of six themes as key to motivation:

- role of the self
- utility
- pedagogy
- learning
- peer-group influences
- curriculum

Each of these themes may be worthy of systematic review on its own. From the point of view of schools and teachers, perhaps those related to pedagogy, learning and the curriculum would be of particular interest.

Finally, as with the focus of any research activity, the opposite perspective suggests itself as a possible topic for review. In this instance, the question of what demotivates learners, especially in relation to the concept of causal chains rather than single incidents would constitute a valid topic for systematic review.

5.3 Implications

The studies on pupil voice would lend weight to the idea that both extrinsic and intrinsic factors impact on motivation. The rhetoric in policy is now related to within-individual aspects of motivation such as self-regulation, self-discipline, self-esteem and self-efficacy. In England and Wales, the 1997 Education Act, and in Scotland the Discipline task groups (Scottish Executive Education Department 2001) both encouraged *self-discipline* in schools. This might indicate that, in policy, important environmental factors are being ignored. The pupils in the studies in the in-depth review expressed opinions about school-work being boring and repetitive. The boys in the study by Slade and Trent (2000) indicated that they felt powerless to change these things and yet they impacted directly on their motivation to learn. This concurs with findings from the American Youth Policy Forum workshop where it was stated 'today's students feel as though high school is irrelevant, that classes are boring, and that they are just passing time until something important [...] comes to pass' (American Youth Policy Forum, 2000, p 4). Across the studies in the in-depth review it would appear that engagement is more likely if:

- the lessons are perceived as 'fun'.
- the lessons are varied and participative
- teachers favour collaborative methodologies and
- pupils perceive activities as useful and authentic.

As a result of the influence that teachers and pedagogy can have on pupil motivation policy-makers may require to examine:

- teacher attitudes, expectations and pedagogy within secondary schools

- the curriculum for the 11–16 age group, in particular what is recognised and valued as student achievement and the role of assessment in nurturing or negatively influencing motivation.

The lack of research which provides a reliable insight into pupil views on motivation is a cause for concern. There is a need for further research that elicits genuine pupil voice and opinion as opposed to pupil responses to predetermined questions and concepts.

This review of pupil voice has confirmed that motivation is a complicated issue. While the literature has broken motivation into various individual factors such as goals, self efficacy and interest, there is a suggestion here that these individual aspects are subsumed at some point into a particular view of a subject or topic which is then used to make conscious decisions about the level at which to engage with particular aspects of school learning. This would lend weight to the idea that, while there are many influences on motivation, disengagement is a conscious decision on the part of the pupil as a result of an affective decision about the subject, topic or school. Various writers suggest that all pupils start with a positive motivation towards learning (Atkinson *et al.*, 1990; Maslow, 1970; McCombs, 1993) An argument exists, therefore, that humans are inherently motivated to learn. Negative affective decisions, therefore, are formed as a result of experiences and external influences. More specifically, therefore, further research is required to shed further light on the role of affective decisions on motivation to learn in the classroom.

- Are young people in the UK making affective decisions that directly influence their motivation to learn in the classroom?
- At what point might these decisions be formed?
- What influences such decisions?
- Is it possible to change these decisions once they are made?

The lack of a simple relationship between disaffection and disengagement is supported by the findings of this review. Disaffection involves a negative affective decision about the subject matter but does not always involve complete disengagement from the subject matter. Both studies that centred on mathematics (Nardi and Steward, 2003; Williams and Ivey, 2001) suggest that disaffected pupils may still engage with the subject matter to a certain degree. As suggested in the background to this review, such engagement is likely to be minimal; enough to please the teacher and keep people 'off their back'. As a result there is a need to be vigilant to the possibility of underachievement and quiet disaffection. If credibility is to be given to the notion of affective decisions then it would seem easier for all involved to ensure that pupils' inherent desires to learn are nurtured rather than trying to change negative affective decisions back into positive ones later on.

6. REFERENCES

6.1 Studies included in map and synthesis

Studies included in the map (22)

Bear GG, Minke KM, Griffin SM, Deemer SA (1998) Achievement-related perceptions of children with learning disabilities and normal achievement: group and developmental differences. *Journal of Learning Disabilities* **31**: 91–104.

Brickhouse NW, Lowery P, Schultz K (2000) What kind of girl does science? *Journal of Research in Science Teaching* **37**: 441–458.

Diffey N, Morton LL, Wolfe A, Tuson J (2001) Language learner motivation: comparing French class attitudes of Scottish and Canadian secondary pupils. *Scottish Educational Review* **33**: 169–182.

Dowson M, McInerney DM (2003) What do students say about their motivational goals? Towards a more complex and dynamic perspective on student motivation. *Contemporary Educational Psychology* **28**: 91–113.

Elliott J (1999) Factors influencing educational motivation: a study of attitudes, expectations and behaviour of children in Sunderland, Kentucky and St Petersburg. *British Educational Research Journal* **25**: 75–94.

Griffard PB, Wandersee JH (1999) Challenges to meaningful learning in African-American females at an urban science high school. *International Journal of Science Education* **21**: 611–632.

Haggarty L, Postlethwaite K (2002) Towards the improvement of learning in secondary school: students' views, their links to theories of motivation and to issues of under- and over-achievement. *Research Papers in Education* **17**: 185–209.

Hufton N, Elliot J (1999) Motivation to learn: the pedagogical nexus in the Russian Common School: some implications for trans-national policy. Paper presented at the British Educational Research Association Conference. University of Sussex, Brighton: 2–5 September.

Hufton NR, Elliott JG, Illushin L (2002) Educational motivation and engagement: qualitative accounts from three countries. *British Educational Research Journal* **28**: 265–289.

Kennedy MA (2002) It's cool because we like to sing: Junior High school boys' experience of choral music as an elective. *Research Studies in Music Education* **18**: 24–34.

Mistler-Jackson M, Songer NB (2000) Student motivation and internet technology: are students empowered to learn science? *Journal of Research in Science Teaching* **37**: 459–479.

- Nardi E, Steward S (2003) Is mathematics T.I.R.E.D.? A profile of quiet disaffection in the secondary mathematics classroom. *British Educational Research Journal* **29**: 345–367.
- Norwich B (1999) Pupils' reasons for learning and behaving and for not learning and behaving in English and maths lessons in a secondary school. *British Journal of Educational Psychology* **69**: 547–569.
- O'Grady K (2003) Motivation in religious education: a collaborative investigation with year eight students. *British Journal of Religious Education* **25**: 214–225.
- Papaioannou A, Kouli O (1999) The effect of task structure, perceived motivational climate and goal orientations on students' task involvement and anxiety. *Journal of Applied Sport Psychology* **11**: 51–71.
- Potter EF, McCormick CB, Busching BA (2001) Academic and life goals: insights from adolescent writers. *High School Journal* **85**: 45–55.
- Slade M, Trent F (2000) What the boys are saying: an examination of the views of boys about declining rates of achievement and retention. *International Education Journal* **1**: 201–229.
- Street P (2001) The role of motivation to the academic achievement of gifted secondary students. *Gifted Education International* **15**: 164–177.
- Whitbeck LB, Hoyt DR, Stubben JD, LaFromboise T (2001) Traditional culture and academic success among American Indian children in the Upper Midwest. *Journal of American Indian Education* **40**: 48–60.
- Williams SR, Ivey KMC (2001) Affective assessment and mathematics classroom engagement: a case study. *Educational Studies in Mathematics* **47**: 75–100.
- Ziegler A, Heller KA (2000) Conditions for self-confidence among boys and girls achieving highly in Chemistry. *Journal of Secondary Gifted Education* **11**: 144–151.
- Zirkel S (2002) Is there a place for me? Role models and academic identity among white students and students of colour. *Teachers College Record* **104**: 357–376.

Studies included in the synthesis (8)

- Diffey N, Morton LL, Wolfe A, Tuson J (2001) Language learner motivation: comparing French class attitudes of Scottish and Canadian secondary pupils. *Scottish Educational Review* **33**: 169–182.
- Griffard PB, Wandersee JH (1999) Challenges to meaningful learning in African-American females at an urban science high school. *International Journal of Science Education* **21**: 611–632.
- Hufton NR, Elliott JG, Illushin L (2002) Educational motivation and engagement: qualitative accounts from three countries. *British Educational Research Journal* **28**: 265–289.

- Nardi E, Steward S (2003) Is mathematics T.I.R.E.D.? A profile of quiet disaffection in the secondary mathematics classroom. *British Educational Research Journal* **29**: 345–367.
- O’Grady K (2003) Motivation in Religious Education: a collaborative investigation with year eight students. *British Journal of Religious Education* **25**: 214–225.
- Potter EF, McCormick CB, Busching BA (2001) Academic and life goals: insights from adolescent writers. *High School Journal* **85**: 45–55.
- Slade M, Trent F (2000) What the boys are saying: an examination of the views of boys about declining rates of achievement and retention. *International Education Journal* **1**: 201–229.
- Williams SR and Ivey KMC (2001) Affective assessment and mathematics classroom engagement: a case study. *Educational Studies in Mathematics* **47**: 75–100.

6.2 Other references used in the text of the report

- American Youth Policy Forum (2000) *High Schools of the Millennium: Report of the Workgroup*. Washington, DC: American Youth Policy Forum. Available at: http://www.aypf.org/publicatons/hschools_round_3.pdf
- Albert S (1977) Temporal Comparison Theory. *Psychological Review* **84**: 485–503.
- Ames C, Ames R (1989) *Research in Motivation in Education*. San Diego: Academic Press.
- Atkinson RL, Atkinson RC, Smith EE, Bem DJ, Hilgard ER (1990) *Introduction to Psychology* (10th ed). New York: Harcourt Brace Janovich.
- Bereiter C, Scardamalia M (1989) Intentional learning as a goal of instruction. In: Resnik LB (ed.) *Knowing, Learning and Instruction: Essays in Honour of Robert Glaser*. Hillsdale, New Jersey: Lawrence Erlbaum, pages 361–392.
- Boaler J (1997a) Setting, social class and survival of the quickest. *British Educational Research Journal* **23**: 575–595.
- Boaler J (1997b) When even the winners are losers: evaluating the experiences of ‘top set’ students. *Journal of Curriculum Studies* **29**: 165–182.
- Boaler J (1997c) *Experiencing School Mathematics: Teaching Styles, Sex and Setting*. Buckingham: Open University Press.
- Bruner J (1996) *The Culture of Education*. Boston: Harvard University Press.
- Cameron J, Banko KM, Pierce WD (2001) Pervasive negative effects of rewards on intrinsic motivation: the myth continues. *The Behaviour Analyst* **24**: 1–44.
- Cameron J, Pierce WD (1994) Reinforcement, reward and intrinsic motivation: a meta-analysis. *Review of Educational Research* **64**: 363–432.

- Cannon WB (1929) *Bodily Changes in Pain, Hunger, Fear and Rage: An Account of Recent Researches into the Function of Emotional Excitement*. New York: D. Appleton and Co.
- Choh SY, Quay ML (2001) Special educators' implicit theories of intelligence. Singapore: Movement for the Intellectually Disabled of Singapore (MINDS). Retrieved on 14 Nov 2002 from: <http://www.minds.org.sg/papers/mms40.htm>
- Connell JP, Ryan RM (1984) Motivation and internalization in the academic domain: the development of self regulation. Paper presented at the meeting of the American Education Research Association, New Orleans, PA: April.
- Cooper P (1993) *Effective Schools for Disaffected Students: Integration and Segregation*. London: Routledge.
- Crick B (1998) *Education for Citizenship and the Teaching of Democracy in Schools. Final Report to the Advisory Group on Citizenship*. London: Qualifications and Curriculum Authority.
- DeCharms R (1968) *Personal Causation*. New York: Academic Press.
- Deci EL (1975) *Intrinsic Motivation*. New York: Plenum Press.
- Deci EL, Koestner R, Ryan RM (1999) A meta-analytic review of experiments examining the effects of intrinsic motivation. *Psychological Bulletin* **125**: 627–668.
- Demos (2002) *Transforming Secondary Education: The Middle Years. A speech by the Rt Hon. Estelle Morris MP, Secretary of State for Education and Skills. 21 March 2002*. London: Demos and the Department for Education and Skills (DfES).
- Department for Education and Skills (DfES) (2002b) *14–19: Opportunity and Excellence*. Annesley, Nottinghamshire: DfES Publications. Available at: <http://publications.teachernet.gov.uk/eOrderingDownload/DfES-0744-2002Main.pdf>
- Department for Education and Skills (DfES) (2003) *Key Stage 3 National Strategy*. London: DfES.
- Department of Education and Science (DES) (1989) *Discipline in schools. Report of the Committee of Enquiry. The Elton Report*. London: HMSO.
- Dweck C (1999) *Self Theories: Their Role in Motivation, Personality and Development*. Philadelphia: Psychology Press.
- Dweck C, Leggett EL (1988) A social cognitive approach to motivation and personality. *Psychological Review* **95**: 256–273.
- Elliott J (1997) *Curriculum Experiment*. Buckingham: Open University Press.
- Festinger L (1954) A Theory of Social Comparison Processes. *Human Relations* **7**: 117–139.
- Gardner RC (1985) *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*. London: Edward Arnold Ltd.

- Gardner RC, Lambert WE (1972) *Attitudes and motivation in second language learning*. Rowley, Massachusetts: Newbury House.
- Gardner RC, Tremblay PF (1994) On motivation, research agendas and theoretical frameworks. *The Modern Language Journal* **78**: 524–527.
- Hampshire County Council (2000) Hampshire County Youth Service Strategic Development Plan 2000–2003. *Hampshire County Youth Service*. Retrieved on 2 April 2003 from <http://www.youth.hants.gov.uk/publications/strategic/inclusion.html>
- Harden A, Garcia J, Oliver S, Rees R, Shepherd J, Brunton G, Oakley A (2004) Applying systematic review methods to studies of people's views: an example from public health research. *Journal of Epidemiology and Community Health* **58**: 794–800.
- Harlen W, Deakin Crick R (2002) A systematic review of the impact of summative assessment and tests on students motivation for learning. Version 1.1. In: *Research Evidence in Education Library*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- Heckhausen H (1991) *Motivation and Action*. Berlin: Springer-Verlag.
- Ireson J, Hallam S, Hurley C (2002) Ability grouping in the secondary school: effects on GCSE attainment in Mathematics and Science and English. Paper presented at the British Educational Research Association Annual Conference. Exeter University, Exeter: 10–14 September 2002.
- Kohn A (1993) *Punished by Rewards: The Trouble with Gold Stars, Incentive Plans, As, Praise and Other Bribes*. Boston: Houghton Mifflin and Co.
- Kuhl J (1984) Volitional aspects of achievement motivation and learned helplessness: towards a comprehensive theory of action control. In: Maher BA (Ed.) *Progress in Experimental Personality Research, Vol. 13*. New York: Academic Press, pages 99-171.
- Learning and Teaching Scotland (LTS) (2002) *Education for Citizenship*. Glasgow: LTS.
- Lepper MR, Greene D (1978) Overjustification research and beyond. Toward a means-end analysis of intrinsic and extrinsic motivation. In: Lepper MR, Greene D (eds) *The hidden costs of reward*. Hilldale, New Jersey: Erlbaum, pages 109–148.
- Maslow AH (1970) *Motivation and personality* (2nd edn). London: Harper Row.
- McCombs BL (1991) Motivation and lifelong learning. *Educational Psychologist* **26**: 117–127.
- McCombs BL (1993) Learner-centred psychological principles for enhancing education: applications in school settings. In: Penner LA, Batsche GM, Knoff HM, Nelson DL (eds) *The Challenges in Mathematics and Science Education: Psychology's Response*. Washington, DC: American Psychological Association.

- McCombs BL (1994) Strategies for assessing and enhancing motivation: keys to promoting self-regulated learning and performance. In: O'Neil HF, Drillings M (eds) *Motivation: Theory and Research*. Hillsdale, New Jersey: Erlbaum.
- McLean A (2003) *The Motivated School*. London: Paul Chapman Publishing.
- Nicholls JG (1984) Achievement motivation: conceptions of ability, subjective experience, task choice and performance. *Psychological Review* **91**: 328–346.
- Nicholls JG (1989) *The competitive ethos and democratic education*. Cambridge, Massachusetts: Harvard University Press.
- Novak JD, Gowin DB (1984) *Learning How to Learn*. New York: Cambridge University Press.
- Oxford R, Shearin J (1994) Language learning motivation: expanding the theoretical framework. *Modern Language Journal* **78**: 12–28.
- Patton MQ (1990) *Qualitative evaluation and research methods* (2nd ed). Newbury Park, CA: Sage.
- Poplin M (1988) Holistic/Constructivist principles of the teaching/learning process: implications for the field of learning disabilities. *Journal of Learning Disabilities* **21**: 401–416.
- Rawsthorne LJ, Elliott AJ (2000) Achievement goals and intrinsic motivation: a meta-analytic review. *Personality and Social Psychology Review* **3**: 326–344.
- Reid K (1987) *Combating School Absenteeism*. London: Hodder and Stoughton.
- Rudduck J (2005) Pupil voice is here to stay! *Qualifications and Curriculum Authority*. Available from: http://www.qca.org.uk/downloads/11478_rudduck_pupil_voice_is_here_to_stay.pdf
- Rummel A, Feinberg R (1988) Cognitive evaluation theory: a meta-analytic review of the literature. *Social Behaviour and Personality*. **16**: 147–164.
- Ryan RM (2000) Peer groups as a context for the socialisation of adolescents' motivation, engagement and achievement in school. *Educational Psychologist* **35**: 101–111.
- Ryan RM, Deci DL (2000) Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemporary Educational Psychology* **25**: 54–67.
- Rychlack JF (1988) *The Psychology of Rigorous Humanism* (2nd ed). New York: New York University Press
- Rychlack JF (1994) *Logical Learning Theory: A Human Teleology and its Empirical Support*. Lincoln, Nebraska: University of Nebraska Press.
- Sansone C, Smith JL (2000) Interest and self-regulation: the relation between having to and wanting to. In: Sansone C, Harackiewicz J (eds) *Intrinsic and Extrinsic Motivation: The Search for Optimal Motivation and Performance*. London: Academic Press.

- Scales PC (1996) *Boxed In and Bored: How Middle Schools Continue to Fail Young Adolescents – And What Good Middle Schools do Right*. Minneapolis: Search Institute.
- Schutz PA (1997) Educational goals, strategies use and academic performance of high school students. *The High School Journal* **80**: 193–201.
- Scottish Executive Education Department (SEED) (2001) *Better Behaviour, Better Learning – Report of the Discipline Task Force*. Edinburgh: SEED.
- Stevenson HW, Chen C, Uttal DH (1990) Beliefs and achievement: a study of Black, Anglo and Hispanic children. *Child Development* **61**: 508–523.
- Stevenson HW, Lee S (1990) A study of American, Chinese and Japanese Children. *Monographs of the Society for Research in Child Development* **221**: issue 55 (whole issue).
- Stevenson HW, Stigler JW (1992) *The Learning Gap: Why our Schools are Failing and What we can Learn from Japanese and Chinese Education*. New York: Summit Books.
- Tattum DP (ed.) (1986) *Management of Disruptive Pupil Behaviour in Schools*. Chichester: Wiley.
- Thomas J, Sutcliffe K, Harden A, Oakley A, Oliver S, Rees R, Brunton G, Kavanagh J (2003) *Children and Healthy Eating: A Systematic Review of Barriers and Facilitators*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- Treagust DF, Venville G, Harrison AG, Tyson L (1997) A multi-dimensional interpretive framework for understanding conceptual change. Paper presented at the National Association for Research in Science Teaching, Oakbrook, Illinois: March.
- Tremblay PF, Gardner RC (1995) Expanding the motivation construct in Language Learning. *The Modern Language Journal* **79**: 505–518.
- United Nations (UN) (1989) *The Convention on the Rights of the Child*. Brussels: United Nations General Assembly.
- United Nations Educational, Scientific and Cultural Organization (UNESCO) (1994) *The Salamanca Statement and Framework for Action on Special Needs Education*. Paris: UNESCO.
- Utman CH (1997) Performance effects of motivation state: a meta-analysis. *Personality and Social Psychology Review* **1**: 170–182.
- Weiner B (1979) A theory of motivation and some classroom experiences. *Journal of Educational Psychology* **71**: 3–23.
- Weiner B (1980) A cognitive (attribution)-emotion-action model of motivated behaviour: an analysis of judgements of help-giving. *Journal of Personality and Social Psychology* **39**: 186–200.

Wentzel KR (1996) Social goals, social relationships as motivators of school adjustment. In: Jovonen J, Wentzel KR (eds) *Social Motivation: Understanding Children's School Adjustment*. New York: Cambridge University Press, pages 226–247.

Appendix 1.1: Advisory Group membership

Stephen Blythe	Pupil, Kirkintilloch High School, Kirkintilloch
Dr Lorna Hamilton	Lecturer, Education and Society, University of Edinburgh
Honor Hania	Senior Librarian, University of Glasgow Library
Clare Harker	Class Teacher, Homlea Primary School, Glasgow
Ruth Higham	Scottish Parent Teacher Council
Alan MacLean	Principal Psychologist, City of Glasgow Education Department, seconded to develop an Engaging Learners Strategy
Dr Marjatta Takala	Department of Special Teacher Education, University of Helsinki, Finland
Dr Frida Tungaraza	Lecturer, Department of Educational Psychology University of Dar es Salaam, Tanzania, East Africa
Dr Valerie Wilson	Director, Scottish Council for Research in Education (SCRE) support and advice

Appendix 2.1: Inclusion and exclusion criteria

Exclusion criteria

1. Does not involve pupils age 11–16
2. Centres on pupils not educated in secondary schools (or their equivalent)
3. Does not report on primary research in which pupils were asked about their motivation to learn
4. Is not written in English
5. Does not contain details of research methods and study
6. Reports on data stated as being collected before 1998

Exclusion criteria – mapping stage

7. Studies which did not report findings of data collected by interviews with students will be excluded.
8. Studies in which interviews with students were used as pilot studies for the methods development (e.g. of subsequent questionnaires) will be excluded.
9. Studies in which data/results of interviews with students are not reported separately from results derived from other methods of data collection (e.g. observation) will be excluded.
10. Studies in which data/results of interviews with students are not reported separately from results derived from other sources of data (e.g. 'teachers') will be excluded.

Appendix 2.2: Search strategy for electronic databases

Search terms

These are the approximate search terms used (the exact expressions varied from one database to another). Terms in columns were combined with the 'OR' operator, and then the 'factors' 'outcomes' and 'subjects' were combined using the 'AND' operator.

Factors

motivation
cognitive evaluation theory
social influence theory reinforce
incentive
reward
self-efficacy
alienation
self-esteem
self-worth
self-concept
social pressure
peer pressure
sanctions
praise
peer influence

Outcomes

learning
attainment
achievement
performance
task
behaviour
behavior
participation
engagement

Subjects

class
pupil
student
child
youth
young people
young person

Literature search log

Below is a log of the searching conducted for the review. Listed are the results of information provided by the Advisory Group, results of handsearches of journals, and a list of the results of electronic searches using a searches.

Source (database/ interface, e.g. ERIC/OVID)	Date captured	Search strategy	Number of hits	Notes
AEI	27 Feb 04	Q-W-00=ATTAINMENT OR ACHIEVEMENT OR PERFORMANCE OR (Q-W-00=TASK?) OR (Q-W-00=BEHAVIOUR OR BEHAVIOR) OR (Q-W-00=PARTICIPATION) OR (Q-W-00=ENGAGEMENT) OR (Q-W-00=LEARNING) AND (Q-W-00=CLASS? OR (Q-W-00=PUPIL? OR STUDENT? OR CHILD? OR YOUTH?) OR (Q-W-00=YOUNG PEOPLE) OR (Q-W-00=YOUNG PERSON) AND (Q-W-00=PEER INFLUENCE OR (Q-W-00=SELF-EFFICACY) OR (Q-W-00=ALIENATION) OR (Q-W-00=SELF-ESTEEM) OR (Q-W-00=SELF-WORTH) OR (Q-W-00=SELF-CONCEPT) OR (Q-W-00=SOCIAL PRESSURE) OR (Q-W-00=PEER PRESSURE) OR (Q-W-00=SANCTIONS) OR (Q-W-00=PRAISE) OR (Q-W-00=COGNITIVE EVALUATION...THEOR?) OR (Q-W-00=SOCIAL INFLUENCE...THEOR?) OR (Q-W-00=REINFORCE?) OR (Q-W-00=INCENTIVE?) OR (Q-W-00=REWARD?) OR (Q-W-00=MOTIVATION?))	1975	

Source (database/ interface, e.g. ERIC/OVID)	Date captured	Search strategy	Number of hits	Notes
OCLC ArticlesFirst	25 Feb 04	(kw: motivation* or (kw: cognitive and kw: evaluation and kw: theor*) or (kw: cognitive w evaluation w theor*) or (kw: social w influence w theor*) or kw: reinforce* or kw: incentiv* or kw: reward+ or kw: self-efficacy or kw: alienation or kw: self-esteem or kw: self-worth or kw: self-concept or (kw: social w pressure+) or (kw: peer w pressure+) or (kw: peer w influence+) or kw: sanctions or kw: praise) and (kw: learning or kw: attainment or kw: achievement or kw: performance or kw: task+ or kw: behavi?2r or kw: participation or kw: engagement or kw: disengag*) and ((kw: pupil* or kw: class* or kw: student* or kw: child* or kw: youth*) or (kw: young w people OR kw: young w person))	733	
OCLC ProceedingsFirst	25 Feb 04	(kw: motivation* or (kw: cognitive and kw: evaluation and kw: theor*) or (kw: cognitive w evaluation w theor*) or (kw: social w influence w theor*) or kw: reinforce* or kw: incentiv* or kw: reward+ or kw: self-efficacy or kw: alienation or kw: self-esteem or kw: self-worth or kw: self-concept or (kw: social w pressure+) or (kw: peer w pressure+) or (kw: peer w influence+) or kw: sanctions or kw: praise) and (kw: learning or kw: attainment or kw: achievement or kw: performance or kw: task+ or kw: behavi?2r or kw: participation or kw: engagement or kw: disengag*) and ((kw: pupil* or kw: class* or kw: student* or kw: child* or kw: youth*) or (kw: young w people OR kw: young w person))	1 22 indiv. papers from two confs.	
ASSIA	27 Feb 04	(pupil* or class* or school* or education* or teach*) and (((DE=(child* or youth or (young pe????)) or DE=(class* or pupil* or student*)) and (DE=(participation or behavior or engagement) or DE=(performance or task* or behaviour) or DE=(learning or attainment or achievement)) and (KW=(praise or (peer influence)) or KW=((social pressure) or (peer pressure) or sanctions) or KW=(self-esteem or self-worth or self-concept) or KW=(reward* or self-efficacy or alienation) or KW=(((social influence) near theor*) or reinforce* or incentive*) or (KW=(cognitive evaluation) near theor*) or KW=motivation*)) and not (higher education))	298	

Source (database/ interface, e.g. ERIC/OVID)	Date captured	Search strategy	Number of hits	Notes
BEI	26 Feb 04	Q-W-00=ATTAINMENT OR ACHIEVEMENT OR PERFORMANCE OR (Q-W-00=TASK?) OR (Q-W-00=BEHAVIOUR OR BEHAVIOR) OR (Q-W-00=PARTICIPATION) OR (Q-W-00=ENGAGEMENT) OR (Q-W-00=LEARNING) AND (Q-W-00=CLASS? OR (Q-W-00=PUPIL? OR STUDENT? OR CHILD? OR YOUTH?) OR (Q-W-00=YOUNG PEOPLE) OR (Q-W-00=YOUNG PERSON) AND (Q-W-00=PEER INFLUENCE OR (Q-W-00=SELF-EFFICACY) OR (Q-W-00=ALIENATION) OR (Q-W-00=SELF-ESTEEM) OR (Q-W-00=SELF-WORTH) OR (Q-W-00=SELF-CONCEPT) OR (Q-W-00=SOCIAL PRESSURE) OR (Q-W-00=PEER PRESSURE) OR (Q-W-00=SANCTIONS) OR (Q-W-00=PRAISE) OR (Q-W-00=COGNITIVE EVALUATION...THEOR?) OR (Q-W-00=SOCIAL INFLUENCE...THEOR?) OR (Q-W-00=REINFORCE?) OR (Q-W-00=INCENTIVE?) OR (Q-W-00=REWARD?) OR (Q-W-00=MOTIVATION?))	573	
BEI wider search	27 Feb 04	Q-W-00=PEER INFLUENCE OR (Q-W-00=SELF-EFFICACY) OR (Q-W-00=ALIENATION) OR (Q-W-00=SELF-ESTEEM) OR (Q-W-00=SELF-WORTH) OR (Q-W-00=SELF-CONCEPT) OR (Q-W-00=SOCIAL PRESSURE) OR (Q-W-00=PEER PRESSURE) OR (Q-W-00=SANCTIONS) OR (Q-W-00=PRAISE) OR (Q-W-00=COGNITIVE EVALUATION...THEOR?) OR (Q-W-00=SOCIAL INFLUENCE...THEOR?) OR (Q-W-00=REINFORCE?) OR (Q-W-00=INCENTIVE?) OR (Q-W-00=REWARD?) OR (Q-W-00=MOTIVATION?) AND (Q-W-00=CLASS? OR (Q-W-00=PUPIL? OR STUDENT? OR CHILD? OR YOUTH?) OR (Q-W-00=YOUNG PEOPLE) OR (Q-W-00=YOUNG PERSON))	1131	Same search terms as BEI above, but without 'outcome' element (i.e. learning, attainment, achievement, etc.)
CERUK	26 Feb 04	KEYWORDS contains 'MOTIVATION'	50	Note: These are <i>projects</i> , as opposed to papers etc.
Education-Line	26 Feb 04	((('PUPIL-MOTIVATION'%)[SUBJ]) OR (('LEARNING-MOTIVATION'%)[SUBJ]))	14	
Educational Research Abstracts	1 Mar 04	KEYWORD contains 'MOTIVATION*' OR TITLE contains 'MOTIVATION*'	234 unique records	

Source (database/ interface, e.g. ERIC/OVID)	Date captured	Search strategy	Number of hits	Notes
ERIC (CSA)	27 Feb 04	((DE=(child* or youth or (young pe????)) or DE=(class* or pupil* or student*)) and (DE=(participation or behavior or engagement) or DE=(performance or task* or behaviour) or DE=(learning or attainment or achievement)) and (KW=(praise or (peer influence)) or KW=((social pressure) or (peer pressure) or sanctions) or KW=(self-esteem or self-worth or self-concept) or KW=(reward* or self-efficacy or alienation) or KW=(((social influence) near theor*) or reinforce* or incentive*) or (KW=(cognitive evaluation) near theor*) or KW=motivation*)) and not (higher education)	6458	Restricted to English language journal articles
Regard	2 Mar 04	((any=motivation or any=self_efficacy or any=incentive or any=reward or any=reinforce or any=alienation or any=self_esteem or any=self_worth or any=self_concept or any=social and any=pressure or any=peer and any=pressure or any=peer and any=influence or any=sanction or any=praise) and (any=learning or any=attainment or any=achievement or any=performance or any=task or any=behaviour or any=participation or any=engagement)) and (any=class or any=pupil or any=student or any=child or any=youth or any=young and any=person or any=young and any=people)) not (type=award)	22	Restricted to 'outputs' (i.e. not including awards, etc.)
REEL	2 Mar 04	((Teaching and learning) AND (Learners)) AND (11-16)) AND (Freetext: (REEL) 'learning OR attainment OR achievement OR performance OR task OR tasks OR behaviour OR behavior OR participation OR engagement') AND (Freetext: (REEL) 'motivation OR motivational OR reinforcement OR reinforcements OR incentive OR incentives OR reward OR rewards OR self-efficacy OR alienation OR self-esteem OR self-concept OR sanctions OR praise OR "peer influence" OR "peer pressure" OR "social influence" OR "social pressure"')	0	
PsycINFO	3 Mar 04	1 exp INTRINSIC MOTIVATION/ or exp ACHIEVEMENT MOTIVATION/ or exp ACADEMIC ACHIEVEMENT MOTIVATION/ or exp MOTIVATION/ or exp EXTRINSIC MOTIVATION/ (30055) 2 social influence theor\$.mp. [mp=title, abstract, heading word, table of contents, key concepts] (60) 3 cognitive evaluation theor\$.mp. [mp=title, abstract, heading word, table of contents, key concepts] (88)	3385	

Source (database/ interface, e.g. ERIC/OVID)	Date captured	Search strategy	Number of hits	Notes
		4 exp VERBAL REINFORCEMENT/ or exp POSITIVE REINFORCEMENT/ or exp REINFORCEMENT/ (25685) 5 exp INCENTIVES/ or exp EDUCATIONAL INCENTIVES/ (2076) 6 exp REWARDS/ or exp INTERNAL REWARDS/ or exp PREFERRED REWARDS/ or exp EXTERNAL REWARDS/ or reward.mp. (13514) 7 exp Self Efficacy/ (5864) 8 exp ALIENATION/ (1519) 9 exp Self Esteem/ (13436) 10 exp Self Concept/ or exp Self Esteem/ or self-worth.mp. (36936) 11 exp Social Influences/ (26945) 12 exp Peer Pressure/ (256) 13 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 (125532) 14 exp MASTERY LEARNING/ or exp LEARNING RATE/ or exp LEARNING STRATEGIES/ or exp LEARNING/ or exp INTENTIONAL LEARNING/ or exp SCHOOL LEARNING/ or exp LEARNING ABILITY/ (98698) 15 exp EDUCATIONAL ATTAINMENT LEVEL/ or attainment.mp. or exp Academic Achievement/ (41950) 16 exp ACHIEVEMENT POTENTIAL/ or exp ACHIEVEMENT/ or exp READING ACHIEVEMENT/ or exp ACADEMIC ACHIEVEMENT PREDICTION/ or exp MATHEMATICS ACHIEVEMENT/ or exp ACADEMIC ACHIEVEMENT MOTIVATION/ or exp ACHIEVEMENT MEASURES/ or exp ACADEMIC ACHIEVEMENT/ or achievement.mp. or exp SCIENCE ACHIEVEMENT/ or exp ACHIEVEMENT MOTIVATION/ (70945) 17 exp PERFORMANCE/ (28749) 18 task\$.mp. or exp TIME ON TASK/ (140169) 19 exp Antisocial Behavior/ (58179) 20 exp PARTICIPATION/ (6987) 21 exp Attention/ or exp Involvement/ or engagement.mp. (30619) 22 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 (380598) 23 classroom.mp. or exp CLASSROOMS/ (30794) 24 exp HIGH SCHOOL STUDENTS/ or exp JUNIOR HIGH SCHOOL STUDENTS/ or exp INTERMEDIATE SCHOOL STUDENTS/ or exp MIDDLE		

Source (database/ interface, e.g. ERIC/OVID)	Date captured	Search strategy	Number of hits	Notes
		SCHOOL STUDENTS/ (28240) 25 exp CHILD ATTITUDES/ (2405) 26 young people.mp. (4677) 27 young person.mp. (233) 28 23 or 24 or 25 or 26 or 27 (62528) 29 13 and 22 and 28 (4480) 30 limit 29 to (human and english language) (4181) 31 limit 30 to (180 school age <age 6 to 12 yrs> or 200 adolescence <age 13 to 17 yrs>) (3385)		

Appendix 2.3: EPPI-Centre keyword sheet, including review-specific keywords

V0.9.7 Bibliographic details and/or unique identifier

<p>A1. Identification of report Citation Contact Handsearch Unknown Electronic database (Please specify.)</p> <p>A2. Status Published In press Unpublished</p> <p>A3. Linked reports <i>Is this report linked to one or more other reports in such a way that they also report the same study?</i></p> <p>Not linked Linked (Please provide bibliographical details and/or unique identifier.) </p> <p>A4. Language (Please specify.) </p> <p>A5. In which country/countries was the study carried out? (Please specify.) </p>	<p>A6. What is/are the topic focus/foci of the study? Assessment Classroom management Curriculum* Equal opportunities Methodology Organisation and management Policy Teacher careers Teaching and learning Other (Please specify.)</p> <p>A7. Curriculum Art Business studies Citizenship Cross-curricular Design and technology Environment General Geography Hidden History ICT Literacy – first language Literacy further languages Literature Maths Music PSE Physical education Religious education Science Vocational Other (Please specify.)</p>	<p>A8. Programme name (Please specify.) </p> <p>A9. What is/are the population focus/foci of the study? Learners Senior management Teaching staff Non-teaching staff Other education practitioners Government Local education authority officers Parents Governors Other (Please specify.)</p> <p>A10. Age of learners (years) 0–4 5–10 11–16 17–20 21 and over</p> <p>A11. Sex of learners Female only Male only Mixed sex</p>	<p>A12. What is/are the educational setting(s) of the study? Community centre Correctional institution Government department Higher education institution Home Independent school Local education authority Nursery school Post-compulsory education institution Primary school Pupil referral unit Residential school Secondary school Special needs school Workplace Other educational setting (Please specify.)</p> <p>A13. Which type(s) of study does this report describe? A. Description B. Exploration of relationships C. Evaluation a. naturally-occurring b. researcher-manipulated D. Development of methodology E. Review a. Systematic review b. Other review</p>
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Review-specific keywords

Section A: Review specific questions

A.1 What is the location of the learning experience?

Categories mutually exclusive

- A.1.1 Both
- A.1.2 Curricular
- A.1.3 Extra- curricular

A.2 What is the focus of motivation in the study?

Categories mutually exclusive

- A.2.1 Extrinsic motivation
- A.2.2 Intrinsic motivation
- A.2.3 Other
- A.2.4 Both intrinsic and extrinsic motivation

A.3 Sample contained students identified as:

*Categories not mutually exclusive except 3.6, 3.7. and 3.8
Select one category plus either 3.6 or 3.7, or select 3.8 only*

- A.3.1 Having social and emotional behavioural difficulties
- A.3.2 Being gifted and talented
- A.3.3 Living with disabilities
- A.3.4 Being disaffected
- A.3.5 Being disengaged
- A.3.6 Being within the wider sample (*i.e. as part of the wider sample in study. Use only if outcomes reported for each group*)
- A.3.7 Being the target sample group
- A.3.8 None of the groups identified

A.4 How was the data gathered?

categories not mutually exclusive

- A.4.1 Standardised assessment tools
scales, indexes, inventories
- A.4.2 Questionnaires
- A.4.3 Open written responses
- A.4.4 Interviews
All types
- A.4.5 Observations

A.5 Study reports on students responses to actions by a classroom teacher

Categories mutually exclusive

- A.5.1 Yes
- A.5.2 No

A.6 Country where study carried out

Categories mutually exclusive except UK/Europe - Code UK studies as Europe also

- A.6.1 UK
- A.6.2 Europe
(EU countries)
- A.6.3 North Africa/Middle East
- A.6.4 North America
USA/Canada/Mexico
- A.6.5 Eastern Europe
(former Eastern Block countries)
- A.6.6 Far East
Japan, China, Hong Kong, Malaysia, Singapore, Taiwan, Korea, Thailand, Burma, Cambodia, Vietnam)
- A.6.7 South East Asia
Pakistan, India, Bangladesh, Sri Lanka
- A.6.8 Other African
- A.6.9 Other
- A.6.10 Central/South America
- A.6.11 Australia/New Zealand

Appendix 3.3: Details of studies included in the systematic map

Country in which the studies were carried out: Table 3.4 gives the countries in which the studies were carried out.

Topic focus: all studies were categorised as focusing on motivation. Although they generally concerned motivation within some curriculum subject, this was not always the case as can be seen in later tables.

Population focus: all studies were concerned with the motivation of learners.

Age of learners: the age range for the study was 11 to 16.

Gender of learners: most studies involved learners of both sexes. Three involved boys only and two involved girls only.

Educational setting: Table A3.3.1 shows that the majority of studies were set in secondary schools. Some studies involved learners from more than one educational setting.

Table A3.3.1: Educational settings (N = 20, not mutually exclusive)

Educational setting	Number
Home	1
Primary school	2
Secondary school	19

Type of study: The majority of studies were designed to explore relationships between the various actors involved in the school community. The asterisk in Table A3.3.2 denotes one study which covers two types of study (Hufton *et al.*).

Table A3.3.2: Type of study (N = 20, not mutually exclusive)

Type of study	Number
Description	5*
Exploration of relationships	10*
Evaluation: naturally occurring	1
Evaluation: researcher manipulated	1
Methodology	1
Case study	1

Review-specific keywords

Location of the learning experience: While all the learning experiences were located in the curriculum, whether specifically or generally, four covered both extra-curricular and curricular.

Focus of motivation: Fifteen of the studies investigated both intrinsic and extrinsic motivation, with a further five studies concentrating specifically upon intrinsic motivation. One study (Ziegler *et al.*) concentrated upon equal opportunities in gender.

Table A3.3.3: What is the focus of motivation in the study? (N = 20, mutually exclusive)

Attribute	Number
Intrinsic motivation	5
Both intrinsic and extrinsic motivation	14
Other	1
Total	20

Characteristics of students: Table A3.3.4 indicates that students were identified across several domains. The group 'being within the wider sample' is clearly identified as the largest group, with a further six studies being outside the keywording listing.

Table A3.3.4: Students characteristics in the sample (N = 20, not mutually exclusive)

Attribute	Number
Having social and emotional behavioural difficulties	1
Being gifted and talented	3
Living with disabilities	1
Being disaffected	1
Being within the wider sample	10
Being the target sample group	3
None of the groups identified	5

How data were gathered: Several methods were used to collect data. Table A3.3.5 indicates the various methodologies employed which are not mutually exclusive. The type of data-collection indicated as 'standardised assessment tools' included several different methodologies, none of which was seen as primary. However, while the remaining types of data-collection might have included several methodologies, the one listed was the primary method. Interviews were the most common type of data-collection. (See also Table A3.3.7.)

Table A3.3.5: Methods of collecting data (N = 20, not mutually exclusive)

Attribute	Number
Standardised assessment tools	3
Questionnaires	8
Open written responses	4
Interviews	18
Observations	9

Study reports on student's responses to actions by a classroom teacher: eleven studies reported exclusively upon students' responses to actions by teachers whilst 10 studies do not.

Table A3.3.6 gives an indication of the specific journals the studies have been published in. The *British Educational Research Journal* is cited three times. (The journal not stated is a paper presented at the British Educational Research Association annual conference. BERA is responsible for publishing the *British Educational Research Journal*.) Apart from the one conference paper, all studies are reported in journal articles.

Table A3.3.6: Article provenance (N = 22 papers)

Authors	Date	Journal
Bear <i>et al.</i>	1998	<i>Journal of Learning Disabilities</i>
Brickhouse <i>et al.</i>	2000	<i>Journal of Research in Science Teaching</i>
Diffey <i>et al.</i>	2001	<i>Scottish Educational Review</i>
Dowson and McInerney	2003	<i>Contemporary Educational Psychology</i>
Elliot	1999	<i>British Educational Research Journal</i>
Griffard and Wandersee	1999	<i>International Journal of Science Education</i>
Haggarty and Postlethwaite	2002	<i>Research Papers in Education</i>
Hufton and Elliot	1999	Paper presented at BERA Conference
Hufton <i>et al.</i>	2002	<i>British Educational Research Journal</i>
Kennedy	2002	<i>Research Studies in Music Education</i>
Mistler-Jackson and Songer	2000	<i>Journal of Research in Science Teaching</i>
Nardi and Steward	2003	<i>British Educational Research Journal</i>
Norwich	1999	<i>British Journal of Educational Psychology</i>
O'Grady	2003	<i>British Journal of Religious Education</i>
Papaioannou and Kouli	1999	<i>Journal of Applied Sport Psychology</i>
Potter <i>et al.</i>	2001	<i>High School Journal</i>
Slade and Trent	2000	<i>International Education Journal</i>
Street	2001	<i>Gifted Education International</i>
Whitbeck <i>et al.</i>	2001	<i>Journal of American Indian Education</i>
Williams and Ivey	2001	<i>Educational Studies in Mathematics</i>
Ziegler and Heller	2000	<i>Journal of Secondary Gifted Education</i>
Zirkel	2002	<i>Teachers' College Record</i>

Table A3.3.7: Focus of studies (N = 20 studies, mutually exclusive)

Authors	Responses to teacher actions	Type of motivation	How data were gathered
Bear <i>et al.</i> (1998)	Yes Response to teacher feedback	Intrinsic/Extrinsic	Standardised assessment tools Questionnaires
Brickhouse <i>et al.</i> (2000)	No	Intrinsic/Extrinsic	Interviews were carried out in the presence of parents. Researchers observed the girls in the classroom.
Diffey <i>et al.</i> (2001)	Yes	Intrinsic	Standardised assessment tools Survey Interviews with volunteer sample of pupils in varied and changing learning situations
Dowson and McInerney (2003)	No	Intrinsic/Extrinsic	Conversational interviews followed by semi-structured interviews followed by structured interviews
Elliot (1999)	Yes	Intrinsic/Extrinsic	Questionnaires
Griffard and Wandersee (1999)	No Students' learning was the focus	Intrinsic/Extrinsic	Interviews Observed in classroom setting
Haggarty and Postlethwaite (2002)	Yes What teachers could do to make them learn	Intrinsic/Extrinsic	Semi-structured interviews
Hufton and Elliot (1999)	No	Intrinsic/Extrinsic	Semi-structured interviews Classroom observation
Hufton <i>et al.</i> (2002)	Yes Reactions to school life generally	Intrinsic/Extrinsic	Interviews in all three countries – semi-structured interview schedule. Russian interviews translated. Russian interviewers spoke fluent English; use of non-native members to conduct the interviews
Kennedy (2002)	No	Intrinsic/Extrinsic	Interviews Observations

Authors	Responses to teacher actions	Type of motivation	How data were gathered
Mistler-Jackson and Songer (2000)	No	Intrinsic	Questionnaires were used initially to select group for case studies. A case-study approach was used, including informal interviews conducted before and after the programme.
Nardi and Steward (2003)	Yes	Intrinsic/Extrinsic	Semi-structured interviews Observations
Norwich (1999)	Yes Parent and teacher interjected reasons reported on	Intrinsic	Questionnaires Inventory to identify reasons for learning and behaving/not learning and behaving in English and mathematics Interviews Semi-structured interviews
O'Grady (2003)	Yes	Intrinsic	Open written responses Ethnographic research involving diaries, focus groups and participant observation. Interviews Observations
Papaioannou and Kouli (1999)	No	Intrinsic/Extrinsic	Questionnaires Interviews Observation
Potter <i>et al.</i> (2001)	Yes The effect of teacher goals on student motivation to write forms part of the study.	Intrinsic/Extrinsic	High school students in seven different English classrooms were interviewed about their views on writing once a year when they were in the fifth, sixth and tenth grades. Interviews, which lasted approximately 45 minutes were semi-structured, with a uniform presentation of questions. Students were asked to rank the quality of written texts recently written by themselves and the researchers, and to give reasons for the evaluations. They were also asked at least eleven questions about their writing experiences, goal orientations and motivation to write.
Slade and Trent (2000)	Yes Boys' views on good and bad teachers	Intrinsic/Extrinsic	Questionnaires Interviews 600 boys in 60 focus groups at 20 schools, selected from over 60 participating schools and balanced across all sectors

Authors	Responses to teacher actions	Type of motivation	How data were gathered
Street (2001)	Yes Student-teacher interaction	Intrinsic/Extrinsic	Individual and group interviews
Whitbeck <i>et al.</i> (2001)	No	Intrinsic/Extrinsic	Questionnaires Open written responses Interviews
Williams and Ivey (2001)	Yes Student was asked about the teacher as well as other stimuli.	Intrinsic/Extrinsic	Semi-structured interviews Multiple interviews Videotape sessions which were transcribed Fieldwork observation with notes
Ziegler and Heller (2000)	No The study focuses on student knowledge and attitudes towards the subject.	Other	Standardised assessment tools Questionnaires Open written responses
Zirkel (2002)	No	Intrinsic	Student questionnaires Open written responses Student diaries and teacher evaluations Interviews Parental interviews

Appendix 4.1: Details of studies included in the in-depth review

Diffey N, Morton LL, Wolfe A, Tuson J (2001) Language learner motivation: comparing French class attitudes of Scottish and Canadian secondary pupils. *Scottish Educational Review* 33: 169–182

What are the broad aims of the study?

- To identify influences on motivation that are cultural and issues that are cross-cultural
- To find out more about what motivates children in the modern languages classroom.

What are the theoretical underpinnings of the study?

The study is related to research on second language acquisition (Gardner, 1985; Gardner and Lambert, 1972; Gardner and Termbly, 1994; Tremblay and Gardner, 1995). The work is also related to theoretical work on motivation, which tracks changes in learner's motivation to study in varied and changing learning situations.

Study design summary

The study compared Canadian and Scottish pupils' attitudes to learning French as a second language. The dependent variable was the group (Canadian, Scottish). The independent variables were identified through the use of the questionnaire (based on the attitude motivation test battery – AMTB). These were:

- locus of control (ability, effort, luck, teachers)
- motivation (desire to learn French, motivational intensity)
- orientation (instrumental, integrative)
- pedagogical attitudes (interest in foreign languages, positive/negative attitude towards learning French, French class anxiety)
- people attitudes (attitude to French Canadians or European French)

The researchers started from what was already 'known' about motivation. It is not clear how the children's views were actually used to listen to their point of view. Rather their views were used to back up the findings of the questionnaire. One illuminating comment was reported in the paper – that you could not be made to like modern languages – very similar to the case study on Bryan, although this is not pursued here. The study also found that the gender issues believed by other researchers to exist did not actually exist for the children. Again, this was very similar to the 'What boys are saying' paper but again this is not pursued. The authors come up with the 'usual suspects' in terms of influences on motivation but that is perhaps because they started with the usual suspects in the questionnaire.

Data-collection

Written responses and oral comments from pupils were collected. Interviews were undertaken with a volunteer sample of pupils from each group and two Canadian teachers.

Questionnaire was issued to 150 pupils.

Wider cultural implications

Diffey, Morton, Wolfe and Tuson argue that a 'back to basics' approach to language learning – one that emphasises grammar and vocabulary – is counter-productive. 'it appears, the real basics of teaching another language to sceptical, but not overly hostile, adolescent learners may lie in the delivery of social and cultural meaningfulness to the language classroom.

Findings

The statistical results appear to indicate that Canadian pupils (1) show a higher interest in foreign languages, along with higher ratings for instrumental orientation, and (2) are more apt to attribute their success to the teacher, along with the potential to be more negative in their attitudes towards teachers.

Conclusions

The two groups (S4 and G9) showed considerably more similarities than dissimilarities in their motivational profiles, as did the total samples in their preferred learning activities.

In two areas, perhaps the educational contexts can learn from each other. Canada, as an officially bilingual country, has an advantage when it come to promoting another language, whereas Scottish teachers may have to direct proportionately more of their energies to addressing the issue of 'perceived relevance' of foreign languages. Canadian teachers and curriculum writers in turn may be advised to place more emphasis on ways of weaning pupils from the view that 'It's up to the teacher' by looking, for example, at the implications of learner autonomy in the language classroom.

The Scottish pupils, with their higher degree of 'indifference' towards the external factors of teachers and marks, appeared on the quantitative measures used, to be more amenable to intrinsic motivation than their Canadian counterparts.

The participants in this study were positively disposed towards the social dimension of languages and opportunities provided for real communication. They reacted negatively to situations which threaten self-image and competence, such as breakdowns in comprehension or self-expression, or being placed in situations of language use which are patently artificial or silly.

In more than one country, it appears that the real basics of teaching another language to sceptical, but not overly hostile, adolescent learners may lie in the delivery of social and cultural meaningfulness to the language classroom.

Griffard PB, Wandersee JH (1999) Challenges to meaningful learning in African-American females at an urban science high school. *International Journal of Science Education* 21: 611–632

What are the broad aims of the study?

To identify factors that adversely affect meaningful learning in two African-American female high-school students. What challenges to meaningful learning persist in a special science high school that provides an interactive, stimulating environment in which to learn science? The study attempts to 'ameliorate' the mitigating conditions of urban public schools. In ideal conditions, the aim was to discover 'What latent challenges reveal themselves as yet to be overcome?'

What are the theoretical underpinnings of the study?

The study was informed by research into metacognition and its role in successful learning. In particular, the work of Bereiter and Scardamalia (1989) in intentional learning as development is used as a theoretical background.

The study refers directly to Novak and Gowin (1984) on metacognition, and considers how to construct clinical interview questions and tasks which could probe the participants' understanding of biology concepts.

Bereiter and Scardamalia (1989) are also referred to in 'intentional learning' or 'learning how to learn'. Their study is also informed by theories of constructivist learning.

Study design summary

The study explores the relationship between teaching and learning methods, and student understanding in a biology class. School policy documents, participant observation, educational artefacts, and formal and informal interviews with learners and teachers are used to ascertain learning gaps and difficulties along with prevailing pedagogical culture and activities in the environment.

Data-collection

Student artefacts of learning – such as handouts, worksheets, journals, written examinations and writing assignments – are analysed, as are archive data (reports) teacher interviews and field notes from observations (20 minutes to 3 hours, usually 1.5 hours).

Interview questions and tasks probed students' understanding of biology concepts, especially about recent classroom activity. Class notebooks, a fictional short story and independent research projects were used for this purpose

One-to-one interview (face to face or by phone) was used.

Interviews were held with the students, the principal and the biology teacher.

All interviews were taped and transcribed.

Direct and indirect questions were asked about peers' and family's regard for the decision to come to the school, work ethic, confidence and role models, evaluation of the quality of science instruction at the school, hobbies, extracurricular activities at both schools and aspirations for the future.

Subsequent interviews were designed to test emerging themes: that learning was not meaningful in their Biology II class; that self-evaluation and metacognitive skills were underdeveloped; their understanding of biology concepts in the curriculum.

Observation took the form of both participant and non-participant.

Test scores were also used along with school/college records (e.g. attendance records, etc.), course work and school reports.

Other documentation included school pamphlets and brochures, adverts, report cards and policy documents.

Wider cultural implications

Griffard and Wandersee's work on generic motivation and cognitive passivity has implications for pedagogy and policy and cultural expectations. Teachers often try *not* to put uncomfortable pressure on students to participate because they do not want motivation to drop. Yet this allows cognitive passivity to flourish in the classroom. Although the behaviour of these students is amenable, the case studies were found to have a 'fundamental lack of understanding of core concepts'. They also had an inflated sense of their own achievement because of the assessment regime promoted by educational policy. Their metacognitive skills, such as self-evaluation, were undeveloped, and the desire to deeply understand and learn were rarely triggered.

Educational pedagogical practices and policy need to acknowledge that 'surface evaluations of learning often overlook the epistemological, ontological, and social/affective influences that are essential for the progress of conceptual change' (Treagust *et al.*, 1997, cited p 631).

Findings

The students were lacking in understanding of scientific concepts, such as cloning. This was due to a lack of metacognitive engagement with the material. It is suggested that the type of transmission teaching methods employed by teachers, along with a focus on behavioural and academic discipline rather than meaningful learning, results in a cycle of cognitive disengagement. Students in such an environment appear to improve their schooling skills, but not necessarily their education.

Having identified learning gaps with the two students, questions were asked about the type of pedagogy that could address the problem of passivity and lack of creative critical thinking.

The result was that neither the specialised science school, with its high quality teacher and abundance of resources (i.e. the magnet school of one participant), nor the neighbourhood school of the other participant seemed to have any impact on encouraging genuine cognitive engagement in either student.

Both students were increasingly adept at 'school' yet remained passive and disconnected learners who largely did not bring ideas from the curriculum to bear on other aspects of their lives.

Reliance upon evaluation of written work fails to grasp this metacognitive problem as students are schooled to regurgitate appropriate information and vocabulary (without necessarily understanding it).

Although better pedagogical strategies might alleviate the problem, it seems to be culturally pervasive rather than the responsibility of any individual.

Most evaluations of successful learning overlook the 'epistemological, ontological, and social/affective influences that are essential for the progress of conceptual change' (Treagust *et al.*, 1997, cited p 631).

Conclusions

The study concludes that even in contexts where resources are plentiful, teachers are highly qualified, and discipline is good, this is not necessarily sufficient for cognitive engagement of students. It is suggested that this is due to a complex set of school/cultural factors, including pedagogy and a focus on evaluation of behaviour and written work, rather than learning structures which are invisible.

Hufton NR, Elliott JG, Illushin L (2002) Educational motivation and engagement: qualitative accounts from three countries. *British Educational Research Journal* 28: 265–289

What are the broad aims of the study?

The areas for study have emerged from previous research on work rating differences across cultures: that is, from Stevenson and colleagues (Stevenson and Lee, 1990; Stevenson and Stigler, 1992), comparing USA and Asian countries and from the previous phases of the study. The categories appear to have emerged from Stevenson's work. The authors have looked at this in previous phases and are now using their findings to look more closely at this through pupil interviews. The aim is to illuminate and explore findings from earlier studies related to:

- attitudes to schooling
- self-evaluations of academic performance
- patterns and rate of work at home and at school
- reasons why education may be valuable
- aspirations for the future

The study draws on a variety of theoretical perspectives rather than one theory.

The researchers want to problematise the concepts of effort and ability.

What are the theoretical underpinnings of the study?

The researchers draw upon a variety of theoretical perspectives, including attribution, intrinsic/extrinsic motivation, self-efficacy, expectancy, x-value and goal orientation.

The researchers have been greatly influenced by the work of Stevenson and colleagues (Stevenson and Lee, 1990; Stevenson and Stigler, 1992) which has sought to explain why achievement and work rate in many Asian countries exceeds that in the USA.

The paper discusses the differences between cognition and engagement through the work of Ryan (2000). The distinction between a pre-decisional and post-decisional phase is explored through the work of Kuhl (1984) and Heckhausen (1991).

Study design summary

The study sought to investigate children's perceptions about how hard they felt they worked and why that was. It investigated understanding about influential factors impacting upon academic self-perceptions and expectations. Student understandings of effort and ability were investigated as well as peer relationships and how these might impact upon one's willingness to work hard.

The value placed upon being educated as an end in itself and the ways in which children's current motivations and aspirations for the future were conditioned by particular sets of social and economic circumstances were investigated. Finally, similarities and/or differences between the views of pupils in the three countries involved in the study were compared.

Data-collection

The types of data collected were based upon pupils' perspectives and opinions. Several themes provided the basis of the findings of the study: pupils' satisfaction, effort-ability attributions, peer influence and the value of education.

The study explored issues of the nature of the pupils' school day; homework and the use of leisure time; their orientation towards learning and work; relationships with peers; self-perceptions of ability and work rate; the relative importance of ability and working hard with regard to performance; the perceived value of education; and future vocational and life goals. Each pupil was asked about their academic progress and grades.

While it is clear that the data were collected through face-to-face interviews, it is not clear whether these were group interviews or one-to-one interviews. The interviews were semi-structured.

Wider cultural implications

Hufton *et al.* note that in England and the United States, heavy emphasis has been placed on schools to raise achievement. If policies are put in place in isolation from the wider cultural value systems then, they argue, it is unclear to what extent real changes will be forthcoming. In these two cultures, education was regarded rather narrowly as providing a utilitarian good in the form of qualifications and entry to vocational opportunities. Student evaluation of their own ability and effort seems to be influenced by peer grouping, curriculum and assessment practices, and wider social values. Resistance to curriculum content and teacher authority seems to be a form of resistance to a perception that schooling is about imposing economic values and norms upon the population. 'It is conceivable that attitudes to schooling in Sunderland and Kentucky reflected a survival of attitudes and practices of resistance to a resented external cultural imposition, which made teachers, as its agents, "fair game"' (p 283). The dissonance between local community values and national policies and educational organisation creates a gulf that narrowly conceived utilitarian motives are unlikely to shift significantly.

In Russia, education was more closely aligned to the society's regard for a cultured and educated person. The curriculum and classroom layout represented an egalitarian approach that is 'forcefully required of teachers' and peer group behaviour closely conformed to the high adult community expectations of student ability and effort. Education is 'accepted as a universal good, which it would have been ungrateful, anti-social and foolish to refuse'. The authors maintain careful neutrality, stating simply 'No doubt the effects of a competitive free market in labour will continue to influence Russian attitudes to schooling' (p 284).

The wider community, especially in the lowest achieving area of Kentucky placed higher value, commitment and dedication on sport and leisure in the face of the narrowly proscribed utility value of schooling. The massive reforms in education that have been undertaken in the USA have not substantially improved achievement. The 'attitudes, beliefs and behaviours' encountered in the study indicate that little has changed. Hufton *et al.* (2002, p 284) argue that improvement is unlikely to occur without 'convincing children, their families and communities that working harder will produce gains that have both meaning and value'.

Findings

Results are presented under four headings: satisfaction with current performance; the importance of effort/ability; the influence of peers; and the value of education and being educated.

Satisfaction with current performance

Kentucky pupils expressed the greatest overall level of self-satisfaction with both work rate and achievements. St Petersburg pupils expressed the least, with the Sunderland pupils falling between, but nearer the St Petersburg end of the spectrum.

The importance of effort/ability

In all three centres, the great majority of pupils attached greater importance to effort than to ability as a means of general achievement in school. The St Petersburg pupils, however, generally thought that some definite talent for a subject was needed to obtain the highest marks, but this was against a background where they believed effort to be important and also normally made very substantial efforts.

While all three centres felt it to be of prime importance, there were major differences between the three centres in terms of emphasis and meaning of the term effort.

The influence of peers

Attitudes of fellow pupils, who worked hard and did well in studies, varied quite markedly between the three centres. In St Petersburg, pupils who achieved highly were respected and regarded both as an adornment by their class and as an asset to their fellows. In rather sharp contrast, in both Kentucky

and Sunderland, pupils had pejorative names for hardworking and successful classmates: 'swots' in Sunderland and 'nerds' in Kentucky.

The value of education and of being educated

It was clear that, probably like most adolescents the world over, our informants rarely found challenging academic study (particularly homework) intrinsically enjoyable. However, extrinsic motivation also has a significant influence upon performance, particularly where the individual identified with the personal importance of behaviours concerned and perceived them as congruent with their wider value system (Ryan and Deci, 2000). The interviews in this study suggested that such congruence was a particular feature of the Russian context.

Of the three groups, the St Petersburg pupils were the most, and the Kentucky pupils the least, likely to equate 'education' with the sum of what was taught in school. Sunderland pupils were the more, and the Kentucky pupils the most, eclectic in relation to what they were taught. No St Petersburg pupil offered any kind of critique of schooling from the point of view of personal preparation for life. Only a minority of Sunderland pupils implied such a critique, but then mostly defensively, discounting the relevance of areas of poorer performance in school. By contrast, Kentucky pupils assumed as normative the notion that they should take from schooling what was personally valuable.

Conclusions

Perhaps the answer to increasing student motivation, engagement and, ultimately, achievement, particularly in areas of disadvantage, lies not primarily in school reform initiatives that tinker with practice, or that place greatest responsibility for learning upon teachers, but by convincing children, their families and communities that working harder will produce gains that have both meaning and value. There is perhaps some evidence of this as currently in both Kentucky, but rather more so in Sunderland, the trend seems to be to see teachers more as allies than adversaries. In Russia, where the curriculum and the school were common and an egalitarian approach was forcefully required of teachers, schooling seems to have been accepted as a universal good, which it would have been ungrateful, anti-social and foolish to refuse.

Nardi E, Steward S (2003) Is mathematics T.I.R.E.D.? A profile of quiet disaffection in the secondary mathematics classroom. *British Educational Research Journal* 29: 345–367

What are the broad aims of the study?

To look specifically at children whose disaffection is expressed in a tacit, non-disruptive manner, namely as disengagement and invisibility, and to construct a profile of quiet disaffection.

What are the theoretical underpinnings of the study?

Examples of the theory discussed are cultural transmission theory (Reid, 1987) and process theory (Cooper, 1993). Examples of research into disaffection referred to in the paper (Elliott, 1997; Tattum, 1986). The concept of motivation as intrinsic is discussed.

Study design summary

The study looks at the relationships between the nature of classroom activities, teaching styles, the role of the teacher, and the role of stratification structures and motivation to learn and engage in the mathematics classroom. Children's prior, current and projected achievement in mathematics, pupils' opinions/perspectives and researcher observations are compared. The observations led to themes that informed the interviewing. Details of the children's prior, current and projected achievement in mathematics were gathered, using field notes, semi-structured interview schedules and tape-recording.

Data-collection

This took place in two stages: classroom observation and group pupil interviews. Observation took place over seven weeks. The article reports mainly on the interview data.

Wider cultural implications

Nardi and Steward's research into disaffected pupils concentrates on those passive, quiet and disengaged pupils they describe as having a 'pathology of presence'. Both curriculum (in mathematics) and pedagogy were most directly criticised by the students and the research for producing this serious disengagement with school. Tedium, isolation, rote-learning, elitism and depersonalisation were categories that emerged from the research. The curriculum in mathematics tends to the abstract and symbolic, chopping up concepts into bite size pieces for ease of learning, and losing the conceptual focus on the way. Repeated assessment tends to produce an elitist and conversely demoralised, disaffected classroom. The implications are, they argue, that modes of pedagogy and teacher training should be cognisant of the problem of quiet disaffection, and the curriculum and assessment measures should be re-evaluated in the light of deep conceptual learning, rather than assessable performance.

Findings

There are five characteristics of quiet disaffection: tedium, isolation, rote-learning (rule- and cue-following), elitism and depersonalisation.

Tedium: Students view mathematics as an irrelevant and boring subject, the learning of which offers no opportunity for activity. Mathematical skills are seen as an isolated body of non-transferable knowledge.

Isolation: More than any other subject, mathematics is perceived by the students in this study as an isolated subject where little opportunity is on offer to work with peers.

Rule- and cue-following: Several students seem to experience mathematics as a set of rules that suggest unquestionable and unique methods and answers to problems, contrasting mathematics to other, perceived as less dogmatic subjects, like art.

Elitism: The students participating in this study seem to perceive mathematics as a demanding subject in which only exceptionally intelligent people can actually succeed. In this frame of thinking, engagement with mathematics is fraught with the risk of exposing the weaknesses in the student's intelligence, and worsens the student's image of their own intellectual capacity.

Depersonalisation: The students plead for classroom mathematical experiences that are tailored to their individual needs. In the absence of such individualisation, they grow alienated from the subject and eventually wish to drop it.

Conclusions

The synthesis and conclusions are presented together. Overall, they state that the students apparently engage with mathematical tasks in the classroom mostly out of a sense of professional obligation and under school or parental pressure. They seem to have minimal appreciation and gain little joy out of this engagement. A substantial number of students made no positive comments (about half) and a smaller, but not negligible, number made clear and firm statements about opting out of the subject in the first instance.

O'Grady K (2003) Motivation in Religious Education: a collaborative investigation with year eight students. *British Journal of Religious Education* 25: 214–225

What are the broad aims of the study?

- To improve teaching practices and transfer methodologies to other less motivated classes.
- To find out more about how drama appealed to the student
- To get all the classes as motivated and engaged as year 8
- To reflect on his own teaching practices.

What are the theoretical underpinnings of the study?

Discussion links the results to work on experiential learning (Hay, 2000), constructivist theory and interpretative pedagogies. It also has close links to the work of John Hull (2000) in instrumentalising religion to RE and instrumentalising RE to children.

Study design summary

The study explores the relationship between motivation, pedagogy and level of pupil involvement.

Data-collection

Data were collected, using written and oral comments from pupils as well as pupil and author observations. A group interview was also employed. The pupils were asked to keep a self-completion report or diary. Coding was based on authors' description, student diaries, field notes and tape-recordings of group interviews.

Wider cultural implications

No comment by author

Findings

Diaries, activities and questions which would motivate students – drama, art, creative writing, watching and discussing videos and holding debates. Questions that motivated could be grouped under broad headings: Muslims, Islamic beliefs, Allah, personal questions, Religious questions, questions about the world, and questions about society.

Observations: grounding lesson content in the students' own concerns, encouraging students to direct their work and using religious material to challenge their assumptions were important as was the encounter with challenging concepts, such as inexpressibility.

Group interviews: motivation was increased using a variety of teaching methods; the use of drama (the students prized the engagement, creativity and imagination that it encouraged); the students being involved in topic and lesson planning; drama activities recreated existential situations, making learning relevant to life; students experiencing self-understanding through interpretation.

Conclusions

Evidence is provided that teachers of RE need to enable students to bring forward their own questions and concerns, and to forge meaningful links between these and religious material.

Potter EF, McCormick CB, Busching BA (2001) Academic and life goals: insights from adolescent writers. *High School Journal* 85: 45–55.

What are the broad aims of the study?

The aim was to understand better the factors that encourage or discourage adolescents' participation in school writing classes and influence their motivation to become skilled writers.

What are the theoretical underpinnings of the study?

The theoretical background is extensive. The study is related explicitly to goal theory research. The authors look at various aspects of goals in both pedagogy and policy, informed by different theorists. They also write extensively on the process of writing, informed by theory of literacy, and writing strategies and motivation.

Study design summary

The study describes pupils' attitudes to writing, exploring the conflicts between what they perceived as effective writing and what they felt teachers valued. It also explored the relationship between meeting goals in school and interest in writing as an extra-curricular activity, demonstrating that those who are motivated to succeed through meeting school determined goals were least likely to enjoy writing as an activity outside school.

Exploration of students relationships with their teachers and the curriculum related to literacy was undertaken. The study looked at grades as the primary goal of students: independence and mastery goals; student congruent goals with classroom requirements; self-expression and identity concerns of African American students and diverse goals among marginalised European American students.

Data-collection

One-to-one interview (face to face or by phone)

Interviews followed the same pattern of open-ended questions based on self-perception of achievement, writing experiences, goals, processes, strategies. They were one-to-one with a familiar interviewer for 45 minutes and took the form of semi-structured interviews with 11 core questions

Wider cultural implications

Potter *et al.* comment that some students comply with the 'school writing requirements with a 'performance' orientation, doing just what was needed to get by' (p 49). This related to the teacher's insistence on 'formalized prose style' which was considered 'wrong ideas about writing' by the two high achieving students. The pupils were concerned that they did not limit themselves to writing 'a text with a crafted message' but rather that their writing reflected, through both style and content, a presentation of self.

Self-efficacy was found to be enhanced by an open pedagogical style that included the merging of 'frequent writing opportunities with frequent examination of writing samples'. This, it was found, 'elicited better student writing than those who gave assignments with rule-based prescriptions or just writing opportunities alone' (p 53). This emphasis on open assessment is not overtly counter-pointed to closed assessment, or tests and examinations, but the critical implications of the busy assessment schedule that regulates contemporary school life is present.

They conclude, 'It is unfortunate that, when life goals are so dominant in students' lives, the high school environment, with its extensive requirements and fast-paced schedules, is more rigid than in the earlier years of schooling' (p 54). Thus an issue emerged in this paper about the restrictive nature of formal assessment schedules and prescribed protocols on children's motivation to write.

Findings

Some students expressed enthusiasm for, and personal motivation to meet the demands of school writing, while others described their more or less grudging compliance, but in almost all cases, developmental and societal concerns interacted with assignment-related goals. The relationship between personal goals, school standards, and student intentions and actions varied greatly, and in ways that have critical implications for secondary teachers of any subject.

Factors that encourage adolescents' participation in school writing classes appears to be 'heavily influenced' by being encouraged to write authentic texts which relate to personal life experiences and/or expressions of self-identity.

When respect for the content of the texts was not present, students from all achievement standards felt alienated and tended to either withdraw from writing or contribute cynically shallow but mechanically accurate texts.

Teacher respect and engagement, along with personal rather than mechanistic goals, seem to be key factors in maintaining motivation.

Conclusions

The life goals of high-school students, in all their personal and ethnic variety, place heavy demands on the high school curriculum. Adolescents have a strong need to be respected for their emerging ideas, and they want schools to assist them in communicating these ideas effectively.

It is crucial that schools and teachers find the time and energy to express genuine caring for students and create a curriculum that is responsive to students' struggles to establish personal and ethnic identities.

Slade M, Trent F (2000) What the boys are saying: an examination of the views of boys about declining rates of achievement and retention. *International Education Journal* 1: 201–229

What are the broad aims of the study?

To provide an overview of what secondary school aged boys are saying about the phenomena of declining retention and achievement, and how their educational outcomes might be improved.

Theoretical underpinnings

Theories of motivation for boys

Study design summary

Student focus group interviews. In response to the emerging issues from the initial survey of schools, the researchers set up the following: focus groups with 600 boys in 60 focus groups at 20 schools selected from the 60+ participating schools.

This was followed by a second session with the focus groups at which a summary of their views was reported back for critical assessment, further comment, refinement and verification.

This was followed by further focus groups of 1,200 boys in 120 focus groups at the remaining 40 schools.

In addition, focus groups of girls from two schools were carried out.

A small selection of groups also completed a trial 'survey of student views' consisting of 100 statements that had been made by the boys in the first 20 schools.

Further data were collected from adolescent males in their first year of tertiary study at Flinders University.

A shift in school practices, institutional expectations and pedagogical practices from blaming individual boys as 'problems' to reconsidering the dominant school culture and making it more applicable to the concerns and issues of wider society was explored. This includes recognising the anxiety of environmental degradation, the rapid and exceptional achievements that this age group meets in their lives outside school, and encouraging respectful and equitable teaching practices.

Data-collection

Focus group interviews, discussion about the boys' own perspectives on the reasons for the low retention and achievement rates of the population were collected. The data were used to notice, categorise and understand the general concerns of boys about education. Open-ended questions were used with emphasis on the researchers' genuine attention, listening and respect for their opinions.

The researchers looked for 'uniformity of viewpoint' to ascertain validity. They discovered that there was uniformity across schools, between groups (both year levels of randomly chosen boys and those identified as 'at risk'), and between levels of achievement. There was methodological uniformity in the analysis and presentation of their points of view.

Wider cultural implications

Slade and Trent reject the deficit model as an explanation of boys' underachievement. They regard the disparity between the concerns of the wider culture, and the narrowly conceived policies and practices of the school as creating the context for the problem of motivation.

Given the rapid pace of social change in recent decades, together with the reality of globalisation, information technology and an aging population, there is a need to understand the influence of conflicting paradigms and the perception of inconsistency and irrelevance within the prevailing paradigm in education. There is, for example, inconsistency and irrelevance, in and between:

- policy and practice, or the rhetoric and experience of education
- notions of success, achievement and appropriate behaviour
- prevailing expectations of education and what is actually achievable, relevant and valued; the recognition, acceptance and application of changing cultural realities – including the impact of democratisation, globalisation and information technology
- fundamental perceptions of space, time, identity, knowledge, truth and values, and the ways in which these are dealt with in education (p 207)

Under the deficit model, there is a tendency to focus on student behaviour as easiest to change, instead of examining the organisation, meaning, and prerogatives of schools, which after all, are 19th century institutions. Slade and Trent think that there is complex interaction between 'bad' teaching, out-of-date school culture, and a boring, irrelevant, and repetitive curriculum. An interconnective and relative mode of interacting within schools, policy, curriculum, pedagogy and wider culture may alter the prevailing trends in a positive light. Epistemology, ontology, methodology, pedagogy and policy would all have to change to meet the requirements of our new environment, and 21st century imperatives. 'The failure of the adult world to genuinely listen to their views are clearly regarded as primary factors, both causally in the sense that they have an immediate influence on the significance

of all other factors, and strategically in that changing one of these, at least initially, changes everything' (p 215).

Findings

What the boys are *not* saying was highlighted when it failed to confirm many of the existing assumptions that prevail in the literature on boys' 'underachievement'. The 'masculinity crisis' is one example. The implication is that 'fixing boys' is too narrow a focus from the boys' point of view.

'Poor teaching' and 'good teachers' make a difference (boys provide a profile of a good teacher).

Boys consider that adults don't listen; this includes all boys (i.e. high achievers as well as 'problem' boys).

The boys did *not* consider it 'hip' to be stupid, or 'uncool to be clever'. Rather, simplistic stereotyping, blaming the victim, and teachers' failure to listen is resulting in their collective disillusionment with education. Adults use arguments such as 'It's not cool to be clever' to reinforce their own points of views rather than addressing the concerns of boys.

It did not occur to the boys that they had a crisis of masculinity.

Gender issues are not simplistic and typical adult measures, such as boys-only classes, only compound the issues.

The curriculum turns out to be what actually happens in a classroom (i.e. is dependent on the teacher).

The theme that their experiences at school were out of date and bore no resemblance to the concerns of their lives or the environment and wider society kept re-occurring. The cause of disruption and behaviour difficulties was directly tied to resistance and feelings of frustration that they were bored, disrespected, and never listened to. Adult behaviour is almost impossible to achieve in an environment which has no basis in trust.

School presents too many contradictions: for example, it purports to prepare pupils for adult life but participation in adult activities – such as part-time work, establishing relationships, owning a car and taking part in sports, etc. – are seen as impinging on schoolwork and homework.

Conclusions

Boys see themselves stuck with an unsuitable learning environment that they cannot change largely because it is constituted by teachers who do not care. Although they identify the curriculum as irrelevant and unchallenging, their experience with 'good' teachers has shown this to be an unnecessary outcome. Furthermore, it is one that is made worse because it is dominated by making education an unpleasant experience, and creating a pre-occupying focus on getting out of school as soon as possible. Once again, their experience with 'good' teachers has shown them that this is also an unnecessary outcome.

Boys actually achieve a great deal in this age group: drivers' licences, part-time jobs, physical, social and sexual maturity, and a largely optimistic attitude to the adverse conditions of schooling.

Recognising these achievements, abandoning the discourse of 'fixing boys' and updating curriculum, teacher training, pedagogy and school organisation in light of the rapid and extraordinary changes in the wider environment would create less of a rupture between the culture of schools and the culture at large.

Boys would like an aging adult world to 'genuinely listen', and to 'catch up' to bring the culture and focus of schooling up to date so that it might be better placed to keep pace with the economic, social and cultural changes that are already making demands that cannot meet, and that in the coming decades will be as dramatic as they are inevitable.

Williams SR and Ivey KMC (2001) Affective assessment and mathematics classroom engagement: a case study. *Educational Studies in Mathematics* 47: 75–100

What are the broad aims of the study?

This paper reports a case study of one student's pattern of engagement in an eighth-grade algebra class. The study aims to use the personal profile of one student to justify logical learning theory as best characterising student motivation.

What are the theoretical underpinnings of the study?

The article is cognisant of a variety of explanatory theories that have been developed about motivation. It makes explicit use of analytic philosophy, including Aristotle, Hegel (unacknowledged), Ricour, and, in particular, Rychlak's logical learning theory.

Study design summary

The study makes use of transcribed interviews with a particularly disaffected, yet very articulate, student to note how current theories of motivation are confirmed or fail to confirm his lack of active engagement with mathematics. They try to justify a meta-theory, based on analytic philosophy – logical learning theory – to describe and understand his self-perceived explanations of his own behaviour.

The researchers observed a single student over the period of a year. They took field notes and held interviews with the student. It was noted that, while the events were 'naturally occurring', any intervention by the researchers was recognised as causing a change in the situation.

This article is really an interpretation of data. It focuses on the philosophy held by the researchers, and by the participant. In particular, the worldview, the subjective agency in relationship to their environment, and the understanding of subjectivity held by both these parties are explored.

Data analysis

This case study emerges out of a meta-study which the researchers were undertaking. The methods adapted for the case study follow the same method of defining the original sample which is limited to mathematical classrooms. One-third of the class in the meta-study was sampled. Reasons for selection in the meta-study are unspecified; however, the reasons for studying the single pupil are clearly defined as mentioned above. In the beginning algebra class, daily sessions were videotaped and field notes were recorded by one of the authors three to five times per week. Project team members reviewed these tapes and verbatim transcripts were prepared for selected episodes. Two extensive, semi-structured interviews were carried out and tape-recorded. These were also transcribed verbatim.

Wider cultural implications

Williams and Ivey apply logical learning theory to their case study in order to justify motivation in neo-liberal terms of reasoned choices based on teleological ends. Their reliance on stringently analytic theory, however, does not bear out the case study presented. The student does appear to be motivated to 'get by' in order to fulfil future end-use values, such as market exchange and holding a job. This explains his persistence at finishing assignments and maintaining average grades. However, it fails to explain his occasional cognitive engagement with mathematics, which has more to do with the realisation that mathematics is not a closed system, that it is culturally and historically contextual, and that agency makes a difference.

Findings

The participant's view of himself and mathematics is described. A section is devoted to current motivation theory. A meta-theory, based on logical learning theory, attempts to create a coherent analysis of the participant's motivation by incorporating and surpassing all the previous theories, in what amounts to (implicitly) a dialectical transcendence.

Earlier theories of motivation rely too heavily on the 'efficient' and 'material' causes (in Aristotle) but neglect the formal and especially the final cause. Formal cause includes a subject, or as the authors describe it, 'a self', that has greater ontological status than events or his actions.

Final cause is a worldview that is attributed with characteristics of the analytic tradition, a dialectical history that arrives at a worldview. The final worldview supports 'post hoc' the decisions made about motivation and engagement in mathematics class.

This supports the view that students are fundamentally choice-making individuals, and that choices, or affections, are informed by a long dialectical history that may be hard to shift.

Conclusions

The authors felt that logical learning theory as a tool, whilst representing a departure from other accounts of motivation, nevertheless provided a promising direction for future study. They found that by taking the notion of the 'self' described in terms of 'final causality,' their approach brought out the fundamental and idiosyncratic nature of liking or disliking mathematics. Moreover, they felt that the study was able to take seriously the dialectical nature of the student's choices by respecting his choices as fundamentally his own. Although other theories were useful in unpacking the meaning that the student extended to mathematics, the authors felt that their approach, employing Aristotle's 'final cause' to affective assessment, was better able to capture the essence of this student's feelings about mathematics.

Appendix 4.2: Weight of Evidence (WoE) framework

Table A4.1: Assessment degree to which studies were subject centred

	Diffey <i>et al.</i> (2001)	Griffard and Wandersee (1999)	Hufton <i>et al.</i> (2002)	Nardi and Steward (2003)	O'Grady (2003)	Potter <i>et al.</i> (2001)	Slade and Trent (2000)	Williams and Ivey (2001)
Aims and objectives were clearly reported	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
There is adequate description of the context in which the research was carried out (including a rationale for why the study was undertaken)	No	Yes	Yes	No	Yes	No	Yes	Yes
There is an adequate description of the sample used and the methods for how the sample was identified and recruited	No	Yes	Yes	No	Yes	No	Yes	Yes
Adequate description of the methods used to collect data	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adequate description of the methods used to analyse data	Yes for Statistical No for interviews	No	Yes	Yes	No	No	Yes	Yes
Is the study replicable from this report?	No	No	No	No	Yes	No	Yes	No
Is bias avoided?	Yes	Yes	Yes	No	Yes	Yes	Yes	No Qualitative
Are data-collection tools considered reliable?	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Are data-collection tools considered valid?	Yes	Yes	Yes	No	No	No	Yes	Yes

Are methods of data analysis considered reliable?	Yes for statistical No for interview	Yes ²	Yes ¹	No	No	Yes	No	Yes Qualitative study reliably established
Are methods of the data analysis considered valid?	Yes for statistical No for interview	Yes ⁴	Yes ³	No	No	No	No	Yes Qualitative study reliably established
Used appropriate data-collection methods for helping pupils to express their views	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Used appropriate methods for ensuring the data analysis is grounded in the views of pupils	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Actively involved pupils in the design and conduct of the study	No	No	No	No	Yes	No	No	No

Notes

1. The description of how the data were analysed addresses some issues of reliability.
2. An interview guide approach (Patton, 1990) was used and both students were asked the same questions.
3. All interviews were transcribed, analysed and cross-referenced across the research team.
4. Meta-cognition problems emerged from three sources: educational artefacts, interviews with participants and interviews with teachers.

Appendix 4.3: Coding for themes identified in individual studies

Paper 1 Hufton NR, Elliott JG, Illushin L (2002) Educational motivation and engagement: qualitative accounts from three countries. *British Educational Research Journal* **28**: 265–289.
WoE D: Medium

Satisfaction with current performance

Dependent on teacher expectations

Teacher expectation in UK and USA is lower than in Russia.

External demands exert an influence.

Student satisfaction with their 'academic performance tended to be influenced both by grouping, curricular and assessment practices and by its relationship to perceived vocational opportunities' (p 282).

Role of teacher was seen as enforcer of academic engagement in the UK and USA.

The importance of effort/ability

Students saw ability as 'performative rather than innate' (p 275).

Ability was viewed by the pupils as an outcome of effort in all three countries. However, UK and USA students were unprepared to go beyond what was demanded of them.

The influence of peers

High achievers were respected and seen as an asset by their peers in Russia. However, in the UK and USA, if the behaviours of the high achievers differed from norms of wider peer culture, then this was not seen as an asset and pejorative terms were used to describe them.

The value of education and being educated

Extrinsic motivation was found to have significant influence on performance 'particularly where the individual identifies with the importance of behaviours concerned and perceives them as congruent with the wider value system' (p 278).

In Russia, it was believed to be important to be 'educated'.

Vicarious utility: this related most to pupils who perceived themselves as sufficiently successful in relation to their ambitions. 'These pupils accepted schooling as helping them to become useful, or saleable, in relation to their various levels of aspiration, in the future labour market' (p 280).

Pragmatic utility: this was expressed by less academically successful pupils 'who seemed unsure that they could become sufficiently useful by way of schooling to compete for any employment they desired' (p 280).

Paper 2 Williams SR and Ivey KMC (2001) Affective assessment and mathematics classroom engagement: a case study. *Educational Studies in Mathematics* **47**: 75–100.
WoE D: High

Causal attribution

'Causal chains rather than simple causes' (p 86) were found to be at the root of motivation.

Believing that they had an innate preference for a subject matter directly related to Bryan's motivation: 'An innate preference for or against mathematics was one way that Bryan explained why he did not engage in mathematics, but other people did' (p 87).

The influence of Bryan's parents was important: '...his parents' dislike of mathematics' (p 87) confirmed Bryan's own views of mathematics.

The repetitive nature of the subject negatively affected Bryan's motivation.

The predictability and emphasis on right answers in mathematics negatively affected Bryan's motivation.

Bryan saw mathematics as a requirement and was willing to make an effort, but engagement was at a minimal level.

Self-efficacy

Bryan 'shows a somewhat ambivalent sense of self-efficacy for mathematics' (p 89). He knows he is good at some parts and less good at others. He viewed himself as being in 'the middle of the class' (p 89). He does 'just enough to remain in the middle of the pack' (p 89). Self-efficacy for Bryan is 'not indicative of his willingness to actively engage in mathematics' (p 89).

Perceived usefulness

'Bryan incorporated his belief that mathematics was essential into nine separate responses...such a perception of usefulness had no effect on his engagement with mathematics...Bryan presented a clear account of his view of the usefulness of mathematics, but he still remained detached from the class and seldom actively engaged in mathematics' (p 90).

Goal orientation

Learning goals and performance goals. Bryan 'alternately expressed learning goals and performance goals, and he discussed ability and effort as related and equally important. To Bryan, ability without effort was useless, but effort without ability was a waste of time' (p 90).

Volition

'An individual's way of mediating undesirable goals,' 'the willingness to follow through when a task becomes unpleasant or difficult and there are other activities in which one would prefer to engage' (p 91). 'Bryan demonstrated volitional control by completing assignments that he found repetitive and boring, but volition did not lead to active engagement; he did the work only because he had to, and he only did enough work to "get by"' (p 92).

Self-expression

Bryan 'saw no place for his own thoughts, his own way of thinking, or his opinions' (p 93). Bryan's need was for a 'place in mathematics to add his own opinions, to think his own way, and to do his own thing...Detachment from what he views as a dehumanising activity is a reasonable response' (p 93).

The role of the self

'We conjecture that, at some point, Bryan had made a negative affective assessment about mathematics' (p 95). Bryan interprets the happenings in the mathematics classroom in ways which affirm (or are affirmed by) his original assessment, over time reaffirming and re-conceptualising mathematics in accord with his initial assessment (p 94).

Group work seemed to offer Bryan a place and the freedom to make his 'own unique contribution' and he became truly engaged in these activities.

Paper 3 Potter EF, McCormick CB, Busching BA (2001) Academic and life goals: insights from adolescent writers. *High School Journal* 85: 45–55. **WoE D: Medium**

Grades as a primary goal by students

'Some students expressed enthusiasm for and personal motivation to meet the demands of school writing, while others described their more or less grudging compliance, but in almost all cases, developmental and societal concerns interacted with assignment related goals' (p48).

'Almost all of the students viewed grades as the 'bottom line' in the determination of school success and as important representations of themselves, but most of them also retained a sense of themselves as writers that was independent of school definitions' (p 48).

Independence and mastery goals

'A sense of awareness of, but independence from school standards pervaded the interviews of ...two high achieving students' (p 48).

'They described their teacher's writing standards as too simplistic and cynically tried to give her what she wanted, without valuing those standards' (p 49).

'Being a good writer was a strong long-term goal for these boys...but they did not perceive their school writing as instrumental in helping them to reach this goal' (p 49). This mastery goal was 'virtually dormant' (p 49) while they 'more or less complied with school writing requirements with a 'performance' orientation, doing just what was needed to get by' (p 49). These students had a strong urge to develop as writers and as people on their own terms, and were thwarted by what they saw as the misguided requirements of their teachers' (p 50).

Student goals congruent with classroom requirements

Girls were very different from boys. The girls in the study 'viewed their own standards as congruent with, and even augmented by, their teacher...They showed no interest in any writing outside of assignments' (p 50).

'Why is it that students who couldn't or wouldn't write suddenly begin to produce better texts, and begin to participate in class discussions? We suspect that the answer lies in the individual's feelings of efficacy and authenticity. Our students saw writing assignments as more 'real' when they had an idea they wanted to communicate to an audience, especially when tied to their career aspirations and their emerging beliefs about the world. They found the energy to write' (p 53).

'Sharing the assessment process with students is another way to capture students' motivation...When students and teachers analyse pieces of writing together in an exchange of views, students can retain a sense of individual authority as authors and teachers convey standards of writing in an authentic context' (p 53).

Paper 4 Slade M, Trent F (2000) What the boys are saying: an examination of the views of boys about declining rates of achievement and retention. *International Education Journal 1*: 201–229. **WoE D: High**

It's not that simple

'The boys generally reject views and strategies that focus solely on 'fixing up the boys' (p 211). 'They identify 'mucking up' in class as a necessary or deliberate response to a set of circumstances that they believe cannot be dealt with in any other way' (p 211). 'Most boys claim that they have 'got a life' and would do a lot better at their school work if teachers took other aspects of their lives into account when setting homework, assessing a piece of work or setting deadlines' (p 211).

'Homework is neglected or rejected because it is too intrusive, destructive and ultimately unachievable without sacrificing more valued aspects of their lives' (p 214).

'Years 8, 9 and 10 waste too much time and the year 11 workload is deliberately made excessive, and comes at a time when the demands of life beyond school are increasing and becoming more important, rewarding and fulfilling, e.g. part time work, sport, social life, etc' (p 214).

'They show puzzlement and irritation when the broad range of interconnected factors involving bad teachers, an out of date school culture and a boring, repetitive and irrelevant curriculum, remain largely ignored while strategies, that amount to 'fixing the boys' are implemented' (p 212).

Masculinity crisis?

'There was very little discussion about any aspect of being male and its significance in education' (p 211).

'If there are problems concerning 'being male' in education, or in society generally, most boys don't see them' (p 212).

Literacy and numeracy?

'Despite the emphasis placed on improving literacy and numeracy for boys, as both an explanation and a strategy to deal with declining retention and achievement, the boys in this study showed surprisingly little interest in the issue, or confidence in the strategy' (p 212).

'If I need it, I'll learn it. If I don't, I won't' (year 9–11) (p 212)

It's not that 'It's not cool to be clever'.

It is 'cool to be clever' but it is not cool to be 'anti-social sometimes to the point of being offensively elitist' (p 213). 'In general, the boys admire cleverness' (p 214). 'The real nerds, it is claimed, bring it upon themselves by being deliberately and often aggressively anti-social, sometimes to the point of being offensively elitist' (p 213).

'The issue of trust and respect repeatedly appears in the focus group discussions. Most boys talk of the difficulty and often impossibility of establishing a relationship of trust with adults' (p 213).

The boys 'talk of trust and respect being established between themselves, in a range of ways, some of which involve "paying out", others are more physical, like pushing, shoving, messing up hair or clothing, and so on. They also talk of how teachers and school rules "get in the way" in these communicative social matters' (p 213).

'School presents too many contradictions and too many debilitating paradoxes' (p 214). For example, 'school expects adult behaviour but doesn't deliver an adult environment' (p 214).

It's not just about gender.

The boys agree that girls get a better deal in school but the factors are interconnected.

Factors identified by the boys

The adult world is not listening (p 214). 'Teachers would understand more if they would 'just listen to you' and recognise all of the things that are going on' (p 211).

'Most boys don't value school, it's more about getting credentials than learning...school for most boys is considered to be an unwanted means to an end that starts out being too distant and becomes increasingly unachievable' (p 214).

'Most girls get a better deal but so do boys who find it easy or necessary to comply and conform, and who quietly get the work done' (p 214).

'School work is boring, repetitive and irrelevant' (p 214).

School doesn't offer the courses that most boys want to do; largely courses and coursework that *'get you ready for a job'* (p 214).

'Homework is neglected or rejected because it is too intrusive, destructive and ultimately unachievable without sacrificing more valued aspects of their lives' (p 214).

Years 8,9, and 10 waste too much time.

School pushes boys into a downward spiral of disaffection, resistance, resentment, anger and retaliation that, for many, is just too hard to stop (p 214).

School presents too many contradictions and too many debilitating paradoxes (p 214).

There are too many bad teachers

'The best classroom environment is one in which there is the conjunction of diversity and the kind of good teacher who is comfortable with difference and is not troubled by the riddle of relativity and its application in teaching practice' (p 218).

'There are 'too many bad teachers' who either create or exacerbate their problems' (p 214).

'A good teacher, it seems, is one who is involved enough to be contextually flexible or pluralistic; someone who accepts the rhetoric of education, in practical, if not theoretical ways, particularly the importance it places on the relativity of identity, knowledge, truth and value' (p 213).

'The boys' emphasis consistently and uniformly returns to the teachers as the primary factor; the one that must be changed before any of the others can be changed; the one which by changing will change all of the others' (p 221).

'Basically, the boys believe that by changing the teachers you have already changed the curriculum. In other words, the curriculum turns out to be what actually happens in the classroom, and learning turns out to be what the participants actually take away with them and use' (p 222).

'For most boys, school is focused on preserving the status quo, which makes it culturally out of date and paradigmatically inflexible. It remains detached from the real world, distant from the rest of their lives, and neither convincingly forward looking, not plausibly concerned with the need to prepare students for a place within the emerging society' (p 215).

'School is about preparing you for adult life, but adult life gets in the way of school; culturally celebrated achievements and rites of passage into adult life' (p 215).

The unrecognised CV

The paradoxical dilemma of education is that 'they have to stay in a place that they believe they can't stay in, doing work that they believe is of no value, in order to get qualifications that they believe do not accurately measure their ability, but which they will need if they are to get the chance to demonstrate their real ability to 'learn on the job' (p 224).

'The boys seem to be aware of their achievements, and aware that the adult world, particularly the world of education, affords them little or no recognition. In its place, they find themselves systematically excluded from being seen as achievers' (p 227).

Paper 5 Nardi E, Steward S (2003) Is mathematics T.I.R.E.D.? A profile of quiet disaffection in the secondary mathematics classroom. *British Educational Research Journal* 29: 345–367. **WoE D: High**

Tedium

'Overall, the students seem to have a minimal appreciation and gain little joy out of their engagement with mathematics' (p 350).

'These students view mathematics as an irrelevant and boring subject, the learning of which offers no opportunity for activity' (p 351).

'Mathematical skills are seen as an isolated body of non-transferrable knowledge' (p 251).

'Students perceive mathematics of limited use in adult life' (p 351).

Isolation

'More than other curriculum subjects, mathematics is perceived by the students in this study as an isolated subject where little opportunity is on offer to work with peers' (p 352).

Students expressed a 'clear preference for collaboration and group work' (p 352).

'Students appreciate a teacher who uses group activities' (p 353).

'Students appreciate a friendly learning environment and being with their friends' (p 353).

Rule- and cue-following (rote-learning)

'Several students in this study seem to experience mathematics as a set of rules that suggest unquestionable and unique methods and answers to problems' (p 354).

'Beneath this dissatisfaction with mathematics as dry proceedings lies, perhaps, a longing for deeper, more essential understanding and for engagement with mathematics that goes beyond...a following of cues provided by the teacher' (p 355).

Elitism

'The students participating in this study seem to perceive mathematics as a demanding subject in which only exceptionally intelligent people can actually succeed. In this frame of thinking engagement with mathematics is fraught with the risk of exposing weaknesses in the students' intelligence and worsens the students' image of their own intellectual capacity' (p 357).

'A worryingly high number of students, and within the context of this study at least, an overwhelmingly high number of almost exclusively female students... express rather fatalistic views on mathematical ability as innate' (p 358).

'Stratification of ability through setting seemed to be the major environmental source of influence on the students' self-image of mathematical ability' (p 358).

'The students find this strictly hierarchical, elitist mathematics resistible and the blows to their mathematical confidence often painful' (p 359).

'The students express their alienation from this depersonalised, deterministic mathematical experience' (p 359).

Depersonalisation

'The students in this study repeatedly and in various forms expressed their appreciation for a learning environment that cautiously caters for their individual needs' (p 359).

'The role of a teacher...emerged as paramount and possibly transcended, in the students' views, the importance of scheme, textbook or activity used' (p 360).

Affective decision

'Students make a conscious choice whether to work in lessons or not' (p 350).

'The students in question apparently engage with mathematical tasks in the classroom but out of a sense of professional obligation' (p 350).

Paper 6 Griffard PB, Wandersee JH (1999) Challenges to meaningful learning in African-American females at an urban science high school. *International Journal of Science Education* 21: 611–632. **WoE D: Medium**

Attention to behaviour over learning

Teachers at the school emphasise behavioural and academic discipline. They were 'preoccupied with discipline' (p 622, Figure 2).

Lack of academic habits in the presence of a work ethic

The completion of assignments does not equate to learning. 'What is missing is cognitive engagement, which is avoidable when assignments can be completed without significant cognitive effort' (p 623).

Activity does not equate to learning. 'All of the teachers observed employed hands-on activities, but none pressed their students for cognitive engagement while doing it' (p 623).

Thus, a theme that emerged is that 'although [the students] have developed a discipline of doing their schoolwork, and their teachers provide abundant hands-on experiences, there is no evidence that these have led automatically to robust learning about the topics' (p 623).

Cognitive passivity

'In spite of their conscientious efforts, teachers at [the school] feel frustrated with their students' poor academic background and thinking skills' (p 624).

Teachers' attention to cognitive engagement. 'One reason it is difficult for a teacher to get all students cognitively engaged is because it requires placing uncomfortable pressure on the students to participate' (p 624).

'Teacher tolerance of students' cognitive passivity and their belief that doing begets learning mutually reinforce each other' (p 625).

Teachers' attention to cognitive engagement

'One reason it is difficult for a teacher to get all students cognitively engaged is because it requires placing uncomfortable pressure on the students to participate' (p 624).

'Teacher tolerance of students' cognitive passivity and their belief that doing begets learning mutually reinforce each other' (p 625).

Generic motivation – confidence with competence

'The motivational speakers who do the school circuit and the inspirational banners hung round the school grounds may be effective in raising confidence and elevating dreams, but their messages are generic and offer no concrete suggestions for setting sub-goals' (p 625).

'Generic motivation...leads to ...confidence without competence' (p 625).

'Most students 'overestimate their knowledge and ability' (p 625).

The students overestimated their prospects for college success.

Metacognition and cognitive reward

'...students showed no signs that they did not know when they did not know. They had not developed significant self-monitoring habits, and they instead relied on their teachers to feedback whether they have learned the information' (p 628).

'They have not learned how to learn' (p 628).

'...a shortage of metacognitive awareness with both girls had been observed' (p 629).

Paper 7 O'Grady K (2003) Motivation in Religious Education: a collaborative investigation with year eight students. *British Journal of Religious Education* 25: 214–225.

WoE D: Medium

The students contrasted RE methodology with the methodology of other lessons.

'The more varied methodology increased the impact of the lessons' (p 219).

'We get to learn in a fun way' (p 219).

The students prized the engagement, creativity and imagination involved in drama activities.

'In drama, you get to express your feelings in actions' (p 220).

The students were keen to be involved in topic and lesson planning.

'This gave a sense of willing participation' (p 220).

'Some students spoke of gaining control, within limits' (p 220).

'The students recognised that drama activities recreated existential situations, making learning relevant to life' (p 220).

'The students described the experience of increased self-understanding, through interpretation' (p 220).

Engagement is a broad term, intended to cover the various features which my students expressed as 'fun'.

'My students pointed to several aspects of engagement. One was collaboration with other students, sharing ideas and solving problems. A second was a varied methodology, avoiding a monotonous diet of teacher-directed written work. A third was that active, experiential work, for example drama, was engaging' (p 221).

Paper 8 Diffey N, Morton LL, Wolfe A, Tuson J (2001) Language learner motivation: comparing French class attitudes of Scottish and Canadian secondary pupils. *Scottish Educational Review* 33: 169–182. **WoE D: Medium**

The social dimension of language learning

Students saw 'value in social interaction with target language speakers' (p 175).

'The [foreign language] class can pose a threat to social competence leading to a phenomenon well recognised in the research as 'foreign language anxiety' (p 175).

'In interviews, frequent reference was made to a particular form of anxiety for adolescents, that of appearing foolish' (p 175).

'When it comes to motivating pupils of this age, self-esteem is clearly one consideration the teacher cannot ignore' (p 176).

'Adolescent pupils in particular may need to experience social success in their target language interactions' (p 176).

Pedagogical issues

'A common reason given in the two settings for continuing language courses was "if you've enjoyed it or not"' (p 177).

"Fun French things" were things such as 'matching pictures and words, watching TV, dice games, and lotto' (p 177).

'One exchange suggested that enjoyment may not in itself be a sufficiently strong motivator: I think if you don't like French you can't really be turned on to like it...if you don't like it to begin with then there's... nothing you can really do' (p 177).

'Activities which tend towards the communicative end of the range are preferred over those that focus on more formal language learning, namely the 'four skills' and grammatical knowledge' (p 177).

'Formal exercises... reduce their interest' (p 177).

'Beyond specific kinds of learning activities, the interviews raised some general issues of language pedagogy. Two which seemed important for both groups were comprehensibility and authenticity' (p 179).

'In classroom interactions, the ability to comprehend is clearly linked to social competence' (p 179).

'Authenticity, whether of language, situations or resources, measures the proximity of the classroom experience to real life' (p 180).

'Suggestions were forthcoming in both settings for authentic classroom activities' (p 180).

Regrouping of findings from the eight studies in the in-depth review into key influences

Code

A	assessment
C	curriculum
L	learning
P	pedagogy
Pe	peers
S	the role of the self
U	utility

- Pe The influence of peers. 1
- Pe It's not that 'It's not cool to be clever.' 4
- Pe It's not just about gender. 4
- Pe Most girls get a better deal but so do boys who find it easy or necessary to comply and conform, and who quietly get the work done. (p 214) 4
- Pe + U The social dimension of language learning. 8
- Pe + S Masculinity crisis? 4

- U The value of education and being educated. 1
- U Perceived usefulness. 2
- U Student goals congruent with classroom requirements. 3
- U Literacy and numeracy? 4
- U Most boys don't value school. 'It's more about getting credentials than learning...school for most boys is considered to be an unwanted means to an end that starts out being too distant and becomes increasingly unachievable.' (p 214) 4
- U School doesn't offer the courses that most boys want to do; largely courses and coursework that 'get you ready for a job.' (p 214) 4
- 'Homework is neglected or rejected because it is too intrusive, destructive and ultimately unachievable without sacrificing more valued aspects of their lives.' (p 214) 4
- U Years 8,9, and 10 waste too much time. 4
- School pushes boys into a downward spiral of disaffection, resistance, resentment, anger and retaliation that, for many, is just too hard to stop. (p 214) 4
- U The students recognised that drama activities recreated existential situations, making learning relevant to life. (p 220) 7
- U + Pe The social dimension of language learning. 8

- P Pedagogical issues. 8

- P 'School work is boring, repetitive and irrelevant.' (p 214) 4
P There are too many bad teachers. 4
P Tedium. 5
P Rule and cue following (rote learning). 5
P Attention to behaviour over learning. 6
P Teachers' attention to cognitive engagement. 6
P The students contrasted RE methodology with the methodology of other lessons. 7
P The students prized the engagement, creativity and imagination involved in drama activities. 7
P The students were keen to be involved in topic and lesson planning. 7
P + S Generic motivation – confidence with competence. 6
P + C Isolation. 5
P The adult world is not listening (p 214). 'Teachers would understand more if they would 'just listen to you' and recognise all of the things that are going on.' (p 211) 4
- L The students described the experience of increased self-understanding, through interpretation.' (p 220) 7
L Engagement is a broad term, intended to cover the various features which my students expressed as 'fun'. 7
L Lack of academic habits in the presence of a work ethic. 6
L Cognitive passivity. 6
L Metacognition and cognitive reward. 6
L The importance of effort/ability. 1
- S The role of the self. 2
S Affective decision. 5
S Independence and mastery goals. 3
S Satisfaction with current performance. 1
S Causal attribution. 2
S Self-efficacy. 2
S Goal orientation. 2
S Volition. 2
S Self-expression. 2
S + Pe Masculinity crisis? 4
S+ P Generic motivation – confidence with competence. 6
- A Grades as a primary goal by students. 3
- C Depersonalisation. 5
C The unrecognised CV. 4
C Elitism. 5
C + P Isolation. 5
- Messages emerging
It's not that simple. 4
School presents too many contradictions and too many debilitating paradoxes. (p 214) 4

Appendix 4.4: Summary of points from the synthesis

The role of the self

- Pupils make decisions about school subjects as a result of a range of interconnected factors that occur over time.
- Once made, these decisions become the dominant influence on the levels of engagement.
- A belief in innate preferences for particular subjects can be confirmed by parental preferences.
- The dichotomy between performance and mastery goals is too simplistic.
- Group work appears to result in greater engagement by pupils.
- Teacher expectations impact on the effort expended by pupils on school-related work.
- Boys interviewed in one study felt that the adult community held erroneous perceptions about how they saw themselves and how this impacted on their motivation to learn.

Utility

- Students appear to be more motivated by activities that they perceive useful or relevant.
- Even where students perceive a task to be useful they are not necessarily motivated to go beyond the requirements of the specified learning task.

Pedagogy

- Some pupils perceive school work as boring and repetitive.
- Pupils perceive that a teacher's approach, attitude and enthusiasm influence their engagement.
- Pupils appear to be more engaged with lessons that they perceive to be fun.
- Pupils appear less interested when classroom activity takes a formal, passive form.
- Pupils express a preference for collaborative work.
- Authentic learning tasks are more likely to cognitively engage pupils.

The influence of peers

- Being perceived as clever appears to be socially acceptable and a source of social respect amongst peers. However, if 'cleverness' is combined with other characteristics that transgress peer-group norms and values, then it is perceived to be less acceptable.

- Pupils perceive that the norms and organisation of 'school' interfere with other more desirable forms of peer-group interactions.
- Pupils frequently expressed the importance of not being made to appear foolish in front of their peer group.

Learning

- Pupils believe that effort is important and can make a difference.
- Pupil effort appears to be influenced by the expectations of the teacher and expectations of the wider community.
- Pupils suggested that increased self-understanding came from collaboration, varied methodology and active, experiential work.

Curriculum

- Some pupils perceive the curriculum to be restricted in what it recognises and values as student achievement.
- Curricula can isolate pupils from their peers and from the subject matter.
- The way that the curriculum is mediated can send messages that it is not accessible to all.
- The way that assessment of the curriculum is constructed and practised in school appears to influence how pupils see themselves as learners and as social beings.

Appendix 4.5: Glossary

Agentive learning	Learning in which the learner has control, choice and autonomy
Authenticity	The use of meaningful learning contexts based on the reality of the learner
Attribution theory	A theory which attempts to explain how people perceive, infer or ascribe causes to behaviour (their own or others). These explanations involve internal/external, dispositional/ situational explanations.
Behaviourist	Based on the school of psychology which had as its theoretical goal, the prediction and control of behaviour. According to behaviourism, virtually all behaviour is a product of learning and all learning is a result of either classic or operational conditioning. Any system within the classroom which attempts to control behaviour through the use of rewards (including praise) and sanctions is based on behaviourist principles.
Cultural transmission theory	The theory which attempts to explain how behaviours, ideas, attitudes, values, etc. shared by a group of people are transmitted from one generation to the next
Dialectic	The process by which modification of existing structures is effected through the expression of conflicting views. An exploration of processes in terms of thesis, antithesis and synthesis
Ecosystemic	A consideration of community factors and all aspects of the environment goal theory, an extension of attribution theory which suggests that people are motivated to pursue particular goals, the two most dominant being mastery and performance goals
Holist/constructivist	Based on the notion that learning is an active process of meaning construction, involving the whole person
Homeostasis	The maintenance of equilibrium through automatic feedback. The process can be physiological, psychological or social.
Locus of control	A cognitive style or personality trait characterised by the extent to which outcomes are perceived as internally controlled through effort and action, or externally controlled through chance or outside forces
Logical learning theory	A theory developed by Rychlak (1988, 1994) grounded on Aristotle's four causes of human behaviour (material, efficient, formal and final). Based on humanistic principles, the theory suggests that final causation may be an important factor in motivation. Since humans are able to reason dialectically, they

	are able to take a stance on issues and, having done this, the stance becomes the premise upon which action is based.
Meta-analysis	A statistical technique for combining the results of research studies using different methodologies or techniques
Metacognition	A general term for knowledge about knowledge, as in being aware of what we know and do not know, how we do or do not understand, remember, etc.
Positive discipline	A behaviourist approach to learning, based on rewards and sanctions
Process theory	An umbrella term encompassing psychological theories in general and attribution theories in particular
Pupil voice	Pupil voice reflects situations in which pupils were encouraged to give their own views, free from the constraints of standardised questionnaires and structured interviews. It reflects a more democratic process than is normally the case when researching what school pupils think and feel.
Stratification	Random sampling applied piecewise to each stratum of the population to ensure adequate representation of all subgroups
Self-actualisation	The fulfilment of all the capabilities of an individual. Based on Carl Roger's humanistic theory of personality
Self-efficacy	A person's sense of competence. The extent to which a person feels able to succeed in a given situation
Self-esteem	Evaluation of self, based on the difference or match between self-concept and ideal self
Systems approach	Based on the systems theory approach, in which groups (such as organisations, families, etc.) are considered to resemble organisms composed of parts, each of which has its own function and interrelationship with others but which are all interdependent
Social comparison theory	The theory proposed by Leon Festinger (1954) which suggests that people evaluate their opinions and abilities by comparing themselves to others
Temporal comparison theory	The theory of personal development proposed by Albert (1977) that suggests that an individual's sense of identity arises from comparing themselves at different points of time