Developing school practice in preparing students for high-stake examinations in English and Mathematics

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Abstract

The Aims: The present research aims to allow teachers to utilize feedback from their students to reflect upon their current and future practice in preparing students for high stakes examinations.

Method: This study engaged teachers of pupils aged 11 to 16 years old (high school) as participants, affording the opportunity to reflect on their current practice in light of feedback from their students. The research was carried out as a single embedded case study within a secondary school, progressing through 3 phases: initial focus group of six English and Mathematic teachers teaching high stake examination programmes to students age 14-16; interviews with 10 students selected from the teachers' classes; follow-up focus group with teachers.

Findings: The research found that students preferred motivation intentioned language which provided personalised and individualised advice. The research found a link between what students perceived to be motivational and the changes that teachers were able to envisage for future practice, indicating that teachers were able to learn from their students.

Limitations: The limitations of the study are the small sample size and focus on English and Maths lessons.

Conclusions: Teachers were able to reflect upon their own practice in light of student feedback and from this were able consider positive teacher and whole school behavioural changes..

Key words: examinations, teachers as researchers, student motivation, teacher behaviour, academic performance

Importance of student performance in high stake examinations

Educational assessments are viewed as 'critical moments' in the life trajectory of children and young people (Denscombe, 2000), allowing for transitions to further education and employment (Woods, 2007). Many students view educational assessments as crucial to their future aspirations. Furthermore, there is evidence that students with special educational needs (SEN) experience higher than average levels of test anxiety (Woods, Parkinson & Lewis, 2010), and that pressure from examinations is a major factor in suicide and self-harming behaviour of children and young people under the age of 20 (Rodway et al., 2016).

However, economically developed countries are in an era of 'performativity', reflected in international competition in educational performance and greater pressure on teachers to ensure student attainment (Williams, Ryan & Morgan, 2014); from 2015, teacher performance related pay in the United Kingdom (UK) was linked to the performance of their students (Department for Education, 2013).

Teacher knowledge of student motivation

A review of current research shows that teacher behaviour can have both positive and negative effects on student motivation and performance in academic progress (Flitcroft & Woods, *Under review)*. To positively influence student motivation and academic performance students prefer teachers to be caring (Wentzel, 1997); be fair and have high expectations (Wentzel, 2002); provide academic support, academic pressure, and support towards goal mastery (LevpuÅÄek & ZupanÄiÄ, 2009); and to develop meaningful relationships with students, show they have good subject knowledge, and engage students in meaningful activities (Siegle, Rubenstein & Mitchell, 2014). Fear appeals (Putwain & Remedios, 2014b) and negative feedback (Wentzel, 2002) are more likely to have a negative effect on motivation. However, no research has been found which evaluates teachers' knowledge of student motivation nor which actively engages teachers to understand their motivationally intentioned behaviours in respect of student achievement. Patrick, Anderman, Bruening, & Duffin (2011) contend that educational psychologists have considerable expertise in "learning, development, motivation, classroom management and assessment" (p.71), which are vital components to effective teaching and the promotion of positive student outcomes.

Developing teacher knowledge

Notably, Woods and Harding (2017) found that an action research approach was more effective as a means of developing teacher and school capacity than was the direct delivery of training and Berliner (1992) contends that it is important for educational psychologists to fully understand school environments and adapt their knowledge accordingly. The 'teacher as researcher' approach enables teacher empowerment, innovation and can improve student performance (Babkie & Provost, 2004; Ovens, 2000; Richardson, 1990). Teacher learning within this process requires both private reflection and collaborative discussion with others (Convery, 2001; Tabachnick and Zeichner, 1986; Zeichner and Tabachnick, 2001). Given that teacher behaviour is embedded within school and national level contexts, the authors hypothesise that the development of teacher capacities for evidence-based practices in respect of student motivation for examination performance would be similarly more amenable through school-based action research approaches than by transmission through direct training. Indeed, whilst current research identifies practices such as fear appeals which may be considered to be generally unhelpful, it does not adequately address inter-student variation, or the reasons why teachers may use motivational strategies thought to be less effective and what the feasible alternatives might be.

Aims of the present study

Teacher behaviour in the lead up to high stake examinations can have positive and/ or negative impacts on student performance. However, research in this field has not engaged teachers collaboratively, or brought together the perspectives of students and teachers to create new understanding in the classroom to better support student motivation (Furlong & Oancea, 2005). Previous research in this area has focused on researcher-led experimental methods, using standardized questionnaires and surveys (Putwain & Roberts, 2012), quantitatively comparing answers from questionnaires to examination results (e.g. Putwain & Remedios, 2014) or using hypothetical vignettes for response elicitation (e.g. Putwain & Symes, 2014). A further limitation of previous research is its focus upon teacher-pupil interaction, disregarding wider relevant contexts of peer and family influences (Bronfenbrenner, 1986). The present research aims to allow teachers to utilize feedback from their students to reflect upon their current and future practice (Furlong & Oancea, 2005). The reported research has three aims; first, to find out what type of motivational language statements teachers are using in the classroom, using relevant background research as an

implicit framework for enquiry; second, to tap into students' views about attainment motivation language they hear from their teachers and from currently unresearched non-teacher sources (e.g. peers and parents); third, to feedback to teachers the views of students providing an opportunity for teachers to develop understanding of the impact of their language, and to review their motivational language prior to high stake examinations. The research focuses upon UK students aged 14-16 as they are studying high-stakes examination programmes (GCSEs), where previous research has shown an impact of teacher achievement-oriented language (Martin, 2001; Putwain & Remedios, 2014b; Putwain & Symes, 2011a, 2011b; Putwain, 2009).

The study research questions are:

1. What language do teachers report using prior to high stake examinations in English and Mathematics and what purpose do they perceive it to serve?
2. How do students perceive language from teachers and non-teachers and what language do students believe would be beneficial?
3. What new approaches can teachers envisage or plan for based on students' views?

Methodology

Design

The research was an exploratory single embedded case study design (Yin, 2009) with a secondary school as the context for the case study of a group of teachers and their students. The research aimed to involve teachers as researchers in order to evaluate the potential for teachers to be empowered in their practice in relation to achievement-promoting language in the classroom (Babkie & Provost, 2004; Bracey, 1991).

The participating mainstream secondary school was recruited in the North of England through a local university and has a track record of using external agencies to support staff development. The co-educational school has 1220 students on role (national average: 957; Ofsted, 2015). As a proxy social deprivation index, 12.6% of the students are also eligible for free school meals (national average 28.5%; Ofsted, 2015). In 2014, 63% of the school's students attained 5 GCSEs (end of formal schooling examinations) grade A* to C including English and Mathematics (National average: 55%; Ofsted, 2015).

Pilot study interviews with a Mathematics teacher, and student (aged 16) who had recently completed end of formal schooling examinations determined the appropriateness of

focus group method for teachers, and interviews for students. The main study comprised of three phases.

Phase 1: Eliciting teachers' examination language

A purposive sample of five teachers, who taught either Mathematics or English to Year 11 students (aged 15-16), was used, together with one teaching assistant who had previously taught the syllabus. The sample included three females and three males and teaching experience ranged from two to 21 years.

A focus group was used to gather teachers' views on achievement-promoting language that they currently use in the classroom and the purpose of this language (Barbour, 2007).

Phase 2: Eliciting student perspectives of examination language

Teachers from Phase 1 of the research were asked to identify four students from their Year 11 examination classes from each of the following categories: achievement on target grade and appears motivated to achieve; achievement below target grade and appears to be motivated; appears less motivated towards examination performance; and those with current performance at a significant grade borderline[1] (e.g. D/C grades, A/A*grades). The teachers were asked not to choose students known by school staff to be vulnerable (e.g. are perceived to have high levels of anxiety, recent bereavement).

From the identified students, 10 were available for interview, with at least one student volunteering from each of the teachers' classes. Of the students who took part, six were female and four were male. Four were viewed as being on target grade and apparently motivated; two students were below target grade and apparently motivated; four students had performance at a significant borderline. Two students were indicated to have Special Educational Needs. No student viewed as less motivated volunteered to take part in the study.

Semi-structured interviews of students were used to gather their views on language used in the classroom prior to their examinations (Oppenheim, 1992). For internal consistency, teacher data from phase 1 were incorporated to student interviews in the form of prompt cards in order to evaluate student perception and views of teacher reported classroom language. Students were also asked what language they would like, or find useful, to hear

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[1] Students on a significant borderline are at risk of getting a lower grade than targeted. A Grade C is viewed as a pass in the English Education System and A* is the highest academic grade available to students.

prior to their examinations. Finally, data were also gathered on messages that students might hear prior to their examinations from non-teacher sources (e.g. parents).

To characterize the student sample, each student's academic self-efficacy and valuing of GCSEs was evaluated. Academic self-efficacy was measured using the *Motivated Strategies for Learning Questionnaire* (MSLQ) (Pintrich & DeGroot, 1990), which identifies three distinct and reliable motivational factors: self-efficacy (Cronbach's α=.89), intrinsic value (Cronbach's α=.87) and test anxiety (Cronbach's α=.75). Valuing of GCSEs was measured using a scale from Putwain and Symes (2014) which is an adaption from the *Michigan Study of Adolescent Life Transitions* (MSALT) scales (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan et al., 1993) along with two additional items suggested by Putwain and Remedios (2014b); items and instructions were adapted to fit the end of formal schooling examiantion context. Student scores were converted to percentages and banded: 0-33% low; 34%-66% moderate; 67%-100% high.

The MSLQ comprises a 7-point rating scale where 1 meant 'not at all true of me' and 7 meant 'very true of me', the remaining points were unlabelled. From the MSLQ, the average scores from the research sample for each component are as follows: self-efficacy, $M = 4.80$, $SD = 1.5$; intrinsic value, $M = 5.48$, $SD = 0.7$; test anxiety, $M = 4.13$, $SD = 1.6$. From the MSLQ, two students (Student 7 and 9) had low self-efficacy in comparison to the others in the study. Four students (Students 2, 7, 8 and 9) also appeared to have higher test anxiety. Overall, two students had lower motivational beliefs (Student 7: 34% and Student 9: 43%) in comparison to the average (62.6%) The average score for Valuing of Examinations was 3.6; one student (Student 7) appeared to have a lower score in comparison to the other students. Due to students' 7 and 9 differences to the rest of the group, additional analysis of interview transcripts was completed to assess if any differential patterns of response were present; none were found.

Phase 3: Planning for the future

Allowing for timetable constraints, four teachers from phase one (2 male; 2 female) reconvened for phase 3 workshop discussion and development from the identified phase two themes.

Phase three comprised two sessions. The first session involved gaining teachers' initial views on feedback about what students had reported hearing from teachers, and what they felt would be helpful. For credibility, student views included verbatim excerpts, as for

change to occur teachers need to be convinced about its likely positive impact upon student learning (Convery, 2001). The second session involved teachers discussing what they felt could be learned and developed from the student feedback either at teacher, department or school level. Teachers were also asked if they felt the process of the research had been a useful and/ or a worthwhile experience.

The rationale for two separate sessions was to allow teachers the time and space for reflection on the student data presentation, as reflection is often considered to be an essentially 'private' activity (Zeichner & Tabachnick, 2001). Reconvening for a second session allowed collaborative discussion to influence practice within the context.

Data analysis

Thematic analysis was applied to both focus group and interview full transcripts as this method allows for identification, analysis and reporting of detailed and meaningful patterns within the data set (Braun & Clarke, 2006). Nvivo software (QSR International Pty Ltd, 2012) was used to systematically organise and classify data.

The thematic analysis proceeded by utilising an inductive approach, meaning the identified themes and codes were developed inductively from the participants' responses within the focus groups and interviews (Braun & Clarke, 2006). The researcher then extended this process to enable quantitative statements to be generated.

Inter-coder validation was completed to ensure validity of codes generated. Five percent of transcripts were coded independently by the lead researcher and co-researcher with inter-coder agreement levels ranging between .76 and .81. Five new codes were identified which related closely to original basic and organising themes.

Ethical considerations

Following ethical approval, the university ethical protocol was adhered to. For student participants, discussion about future examinations was regarded as potentially anxiety-provoking. If the researcher felt any student was upset by the process or raised concerns during the semi-structured interview, relevant information would be passed on to the Head of Year; in the event, no student distress was observed or reported.

The researcher was aware of the reputational risks involved in students talking about their teachers and teachers receiving feedback, albeit anonymised, relating to this. The researcher was mindful of preserving professional confidence of teachers and throughout the

process of feedback, the researcher was mindful of respecting teachers and developing their understanding that the purpose of the student feedback was to provide an opportunity for professional development. Since teachers received student feedback within the focus group, confidentiality outside of the teachers' focus group was discussed and teachers were asked, during the research process, not to discuss student feedback outside the focus group.

Results

Data analysis is presented by research question, with exemplification of each relevant organising theme. Some organising themes were significant in their own right, did not contain sub-themes (basic themes) and so were constituted directly from the coded data.

What language do teachers report using prior to high stake examinations in English and Mathematics and what purpose do they perceive it to serve?

Table 1. Organising themes and basic themes emerging from the data analysis for RQ1

Organising Theme	Basic Theme
Types of Language	Emotional Support
	Motivation
	Advice Giving
	Fear Appeal
	Belief in Pupil
Individual Differences	
Examinations and Future	Impact on Future
	Fear Appeal
Pupils Can Change Outcome	Pupil Control
	Pupil Personality Development
Pressure from External Agencies	

Interestingly, all teachers reported that they do not consciously think about the language that they use and there appeared to be a general consensus that the language used was "automatic" (FGT1). Teachers reflected upon different types of language prior to high stake examinations in English and Mathematics, which are moderated by the individual student being spoken to:

"you're obviously trying to be instructional, you are just trying to think of the best tactic for that person … sometimes it's calming and soothing and other times it's kicking up the bum and like waking up" (FGT4)

Teachers wanted to motivate students to work hard for their examinations, to provide emotional support, and to tell the student that they had belief in their abilities. Advice-giving language typically comprised of subject-specific revision and timescale reminders. Some fear appeals, forecasting the impact of failure on the student, were used by some of the teachers and were used to "scare" (FGT6) students to work hard towards examinations; for example, examination failure would necessitate a college re-sit, entailing increased workload and time spent on a less preferred subject. Conversely, teachers highlighted increased future opportunities from examination success. Teachers emphasised to students that, through their own efforts, they have ultimate control of their examination outcomes.

Teachers commented on their own context of pressure from Ofsted and performance-related pay, reflecting that they did not want to pass this on to the students:

"When you're talking to the students at that moment, yeh that's the only thing that matters talking to the student and getting the best out of the student… you know that you've got to motivate them, 1200 kids but in that moment it's just that one student that matters." (FGT5)

How do students perceive language from teachers and non-teachers and what language do students believe would be beneficial?

Language students report hearing from teachers

Table 2. Organising themes and basic themes emerging from the data analysis for language pupils report hearing

Organising Theme	Basic Theme
Pupil Changes	Pupil Control
	Pupil Self Belief
	Feedback of Progress
Information for Examinationss	Information
	Revision Advice
Teacher Support	Teacher Belief
	Teacher Support
Future	Impact on Future

Time to Change	
Fear Appeals	

The range of language messages that students report hearing prior to examinations highlights a theme of 'student changes' which conveys students' agency to change their behaviour in order to improve examination outcome, e.g. through dedicated working time or 'effort' [persistence]. Most students also heard teachers' belief in their abilities:

"… my teacher is like quite positive towards it and he is always telling me that I should have confidence and he believes that I can pass…". (Student 7; moderate motivation/moderate importance of Examinations)

This verbal message was reinforced by teachers providing additional help and guidance outside of lesson time, and by the provision of progress feedback. All students reported teachers providing revision advice and basic information about the examination (e.g. format, timescale).

Congruent with the teachers' reports, students reported hearing language relating to future impact of examination performance, and fear appeals emphasising the impact of failure. Notably, such language was perceived as being tied to student agency, there still being time to change feared outcomes:

"… like when they say things like there is plenty of time for you to start, it is like a bit of hope and telling us to have confidence". (Student 7; moderate motivation/moderate importance of Examinations).

Language students report hearing from non-teacher sources

Table 3. Organising themes and basic themes emerging from the data analysis for language pupils report hearing from other sources

Organising Theme	Basic Theme
Revision Advice	
Emotional Support	Belief
	Support
Impact of Present on Future	Results to date
	Impact on future
	Fear Appeals

Students reported mainly receiving messages from parents, which, in contrast to teacher language, focused primarily on recommended 'amounts of revision' [time spent working at home] and prioritisation of subjects (e.g. focus upon subjects important for further education).

"… if I get stressed I can speak to my mum about it and maybe sometimes my mum does say to me maybe you should just do this tonight and stop for a little bit cause you're doing a bit too much." (Student 2; moderate motivation/high importance of Examinations)

All students perceived and valued emotional support from parents through messages of confidence in their abilities and 'trying their best'; parents had an understanding of them 'as a person', of when emotional support was appropriate, and of the best form of emotional support for them. All students regarded specific examination advice as being the most valuable when it came from teachers:

"I think it's more my teachers cause I feel that they would know more about how I'm doing but my mum and dad they only know what I've been doing at home and they don't know what I do at school which I think a lot of my teachers know that I do a lot in school and I do a lot at home to get the grades that I want." (Student 2; moderate motivation/high importance of Examinations)

Teachers were recognised as having the subject knowledge and experience to know when a student was 'off target', and to be able to advise accordingly from a wider variety of learning and study techniques.

Some students reported having heard messages from the media about examinations getting harder and performance-related teacher pay, though these were not viewed as significant.

Messages that students would find beneficial

Table 4. Organising themes and basic themes emerging from the data analysis for language pupils would like to hear

Organising Theme	Basic Theme
Types of Language	Belief
	No Exam Language

	Informative Language
	Optimistic Language
	Avoid Negative Language
	Emotional Support
	Fear Appeal*
Examination Work Guidance	Revision Techniques
	Every Year Counts
	Revision Organisation
	Indiviudalised Advice
	Subject Knowledge
	When to Start
	Amount of Work
Giving of Language	Pace of Exam Language
	Level of Language
Examinations and Pupils Future	Reality of Examinations
	Pupil Control
	Impact on Future

All students had formed a view about different aspects of language messages that they would find beneficial prior to high-stake examinations. Some students would value optimistic messages of belief in their chances of success, rather than negative messages associated with fear appeals. Students also identified a need for emotional support (calming reassurance) to reduce worry directly before an examination. At the same time, some students did not want class-based discussion of examinations as they did not want to talk about examinations with friends, as well as with teachers and parents. Surprisingly, some students did value fear appeals in the context of messages of belief in their ability to succeed, of emotional support, and of specific guidance to support success.

All students wanted specific guidance on revision; they wanted individualised advice relating to their current progress, next steps, and specific revision techniques that would work for them.

"Maybe just try and push me a little bit more, may say oh like do, 'cause they don't really say to me oh maybe try this practice question…." (Student 2; moderate motivation/high importance of Examinations)

Some students indicated they would like discussion of examination preparation to start in year 7 (age 11/ 12 years), maintaining a steady pace, so they can scaffold their learning, rather than experience a pressurising step change in messages in Year 10 (age 14/15 years) when they were "stressed enough as it is" (Student 4). All students made it clear that they preferred individualised examination support to be provided by class teachers, rather than departmental leaders:

"I think class level 'cause it's more personalised to a particular lesson you're in and the particular things you need to know whereas at year group its more generalised and certain things wouldn't apply to certain people as they didn't take certain lessons." (Student 1; high motivation/high importance of Examinations)

Several students wanted 'honest' messages about the impact of examination outcomes on their future, e.g. realistic evaluation of importance of subjects:

"Well it is sometimes like, I am actually quite happy with an A in that, a subject I am not desperate about, there are some that I definitely want to get an A*..." (Student 5; high motivation/high importance of Examinations)

What new approaches can teachers envisage or plan for based on students' views?

Table 5. Organising themes and basic themes emerging from the data analysis for new approach teachers can envisage

Organising Theme	Basic Theme
Developing Pupil Independence	Revision Organisation
	Teaching Study Skills
	Metacognition
	Specific Revision Techniques
Individual Support	Providing Individualised Support
	Mentor
Long Term Significance	Future Impact
	Different Viewpoints
	Examinations as Long Term Activity

Whole School Approach	Whole School Homework Approach
	Assembly Format
	Whole School Revision Plan
	Developing Peer Support
Recap Knowledge	
Parent Viewpoint of Examinations	

The two-part second teacher focus group produced an action plan of possible approaches based upon the knowledge of student experience and perspectives.

Teachers proposed a range of strategies and considerations to motivate and skill students to become independent learners. Study skills, time management and metacognition lessons from ages 12 to 14 years would prepare students for intensive study towards high-stakes examinations at age 15-16. In line with feedback from students, teachers debated how to provide individualised support for students, e.g. daily form tutor meetings, weekly incentivised assertive mentor meetings for target setting. The teachers acknowledged time constraints for individualised support and identified that job role descriptions would need to incorporate these activities.

From the student feedback, teachers intimated that students perhaps did not recognise the long term impact of examination performance. Teachers proposed the utility of: motivational guest speakers at school assemblies to exemplify the life impacts of examination outcomes; of employers outlining their requirements; and of further education staff explaining the disadvantages of examination re-sits.

Further strategies proposed by the teacher focus group included: targeted assemblies to provide more differentiated guidance; creation of a whole school revision plan to support realistic revision planning at subject level; use of "pop quizzes", which the teachers believed was common practice in the US, to re-cap (overlearn) knowledge. From student feedback about parent guidance on subject prioritisation, teachers felt it would be useful to develop examination-related home-school communications to arrive at coordinated and well-informed perspective and strategies to support students at home and at school.

Discussion

      The research reported here provides a demonstration of the feasibility and potential utility of school-based research, involving teachers as collaborators, in the endeavour to promote student motivation for achievement in high-stake examinations. There appears to be a link between what students said they would like to hear and the ideas teachers were able to envisage, showing that teachers can learn from their individual students, and generalise this to their classes and the school system more widely. A limitation of this research is that no unmotivated students and no students with a low value of importance for examinations were interviewed and they potentially would have teacher perceived language differently. A further limitation of the present research are its small sample size and subject-specific focus, reducing to some extent the generalisibility of findings across subjects and school settings. Nonetheless, the findings give a preliminary indication of the types and processes of future adaptions to better suit students in the lead-up to high-stake examinations.

Language teachers use prior to high stake examinations in English and Mathematics

      Both teachers and students identified messages of advice giving language (Putwain & Remedios, 2014b), fear appeals (Putwain & Remedios, 2014b) and emotional support (Wentzel, 1997). Teachers identified their use of fear appeals with some students in order to 'scare' and motivate students thought not to be putting sufficient 'effort' into their work, though some students did not know whether the messages applied to them. However, fear appeals can lead to a negative impact on students' academic performance (Putwain & Remedios, 2014b; Wentzel, 2002), therefore educational psychologists could provide support for teachers in understanding the limitations of the use of fear appeals.

      Teachers from the focus group felt strongly that students had ultimate control of how well they performed in their examinations, and controlled how successful they are (Skinner & Belmont, 1993). However, this premise relies entirely upon students having the tools by which to enable themselves to take control of their learning and be effective in their examination preparation. Educational psychologists could provide support to schools, through training or action research, to build capacity for staff to support students in becoming independent learners in an examination context.

Messages from sources other than teachers

      Students identified other influential sources with regards to high-stake examinations as parents, siblings, grandparents, extended family and friends. Students recognised that they

sought and received emotional support mainly from their parents. This may be challenging for those parents who may not have the knowledge of the context, content or possible outcomes of high-stake examinations. Students identified teacher messages as the most important as teachers have subject-specific knowledge and experience of the examination system. Students viewed parents' messages as more important for emotional support and belief in the possibility of success. Taken together, these findings indicate the potential utility of creating a model of home-school collaboration in which teachers and parents can co-ordinate their knowledge of the child and the requirements of the examination system.

Language students would like to hear

Students valued messages which convey emotional support and belief in the possibility of success (cf. LevpuÅÄek & ZupanÄiÄ, 2009; Wentzel, 1997). The exception to this was if students were at risk of failing and in this case they wanted teachers to use fear appeals accompanied by messages of belief, emotional support and specific guidance of how to avoid failure (Sprinkle et al., 2006).

Though Putwain and Symes (2011b) suggest that communicating the importance of high stake examinations to students from the beginning of year 10 (age 14/15), students in this research wanted to be informed from year 7 (age 11/12). Although feasible, it may be that younger students do not see the relevance of earlier preparatory messages.

Students indicated a need for specific and individualised advice for their own success, wanting to be recognised as individuals with their own methods (cf. Siegle et al., 2014). Paradoxically, then, the pressures for student achievement that feature so prominently in the teachers' reality, are best discounted as students need to feel safe and contained within the learning environment.

Students considered that sometimes teachers misrepresented the importance of examinations as not all subjects carried equal weight. In practice, however, explicit in-school 'ranking' of subjects might be difficult to enact, though it may be possible to link together mastery goal orientation to individual differences in expectancy value (Eccles, Adler, Futterman, Goff, Kaczala, Meeces et al., 1983); that is, to help each student to evaluate what is most important to them, acknowledging that they may need to allocate time according to priorities.

Envisaging different approaches to student examination motivation

In response to student feedback, teachers envisaged adaptions in whole school practices as well as messages conveyed through language, e.g. differentiated assemblies to support targeting of messages.

Although students wanted to be given information for examinations, revision techniques and timetables, teachers felt it was more important to develop them as independent learners, proposing that teaching study skills would allow students to become empowered in their learning and to self-regulate progress. Students as independent learners is proposed to be a key part of student motivation (Meyer et al., 2008).

From students' need for individual support, teachers suggested weekly meetings between a student and 'an assertive mentor', in which weekly targets would be set and monitored, a practice linked to superior achievement (Schunk, 1989; Zimmerman, 1989).

Future practice-based research for student motivation

In the present research teachers engaged fully in a process of self-evaluation and seemed genuinely interested to find out about their students' experiences. They were able to envisage new possibilities from student feedback, to reflect upon the practices of the school, and to propose future developments. Replication and extension of the current research is important to assess the generalisability of the findings since contextual variations, for example, relating to curriculum, student expectancies, and examination boards, may all affect possible responses within a school setting; further research is currently underway (McCaldin, 2015). In this research, teachers suggested it would be useful in any replication to have students participate in the action planning phase so that teachers can clarify or negotiate some of the ideas they have created. Teachers also suggested senior leadership participation for guidance on the feasibility of ideas and support for implementation. Future research could usefully extend this piece of research to allow teachers to implement the initial ideas generated and to review at a later date the usefulness, perceived effectiveness, and feasibility of these ideas.

The current research suggests that teachers can benefit from developing a psychological perspective which enables them to reduce school and teacher environmental constraints, to support students towards mastery, and to promote students' feelings of being emotionally supported and cared for. There is, however, limited research in the area of teacher knowledge of student motivation and this subject gets scant attention within the

literature on general pedagogical knowledge (Siegle et al., 2014; Tamir, 1987). Therefore, it appears it would be useful for educational psychologists to provide and evaluate teacher access to opportunities to develop relevant motivational theory and research.

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