Boys and Motivation

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Abstract

This paper explores key gender differences in motivation from a quantitative perspective and presents findings from a qualitative study into boys' perceptions of motivating teachers and motivating pedagogy. Data collected from 3773 high school students suggest that girls score significantly higher than boys in their belief in the value of school, learning focus, planning, study management, and persistence while boys rate significantly higher in self-sabotage/self-handicapping. However, girls rated significantly higher than boys in anxiety. In the qualitative phase of the research, boys identified the following features of effective and motivating pedagogy: a good relationship between student and teacher, the teacher's enjoyment of teaching and working with young people, providing boys with choices and input into the lesson, making schoolwork interesting and/or relevant, providing variety in content and methods, and respecting boys' opinions and perspectives. The paper then draws on data presented elsewhere to show that, in addition to some key gender differences in motivation, there are also some noteworthy parallels between boys and girls. The paper concludes with a discussion of motivation as it relates to the social construction of gender, fear of failure and masculinity, and program development, construction and implementation.

Introduction

Data collected over the past three decades suggest that there are differences between boys and girls in terms of key educational processes and outcomes (Ainley and Lonsdale 2000, Collins, Kenway and McLeod 2000, DETYA 2000, Horne 2000, House of Representatives Standing Committee on Education and Training 2002, Lingard, Martino, Mills and Bahr 2002, MacDonald, Saunders and Benfield 1999, Martin 2002a, OECD 2001, Rowe 1997, Rowe and Rowe 1999). An issue that has received relatively little treatment is motivation. This is not to suggest that there is not widespread recognition of the role of motivation in boys' education. Rather, to date there has been little fine-grained analysis of specific facets of motivation that are relevant to boys'

engagement and achievement at school. It is suggested here that the most useful approach to motivating boys is one that is targeted and multi-faceted. It is argued that such an approach best lends itself to educational intervention because the more educators are able to identify specific facets of motivation relevant to boys' engagement and achievement, the more tangible and actionable their advice and guidance to boys is likely to be.

A model of motivation

Motivation can be conceptualised as students' energy and drive to learn, work effectively and achieve to their potential at school, and the behaviours that follow from this energy and drive. Motivation plays a large part in students' interest in and enjoyment of school and study. Motivation also underpins students' achievement (Marsh, Martin and Debus 2001, Martin 2001, 2002b, 2003b, Martin and Debus 1998, Martin and Marsh 2003, Martin, Marsh and Debus 2001a, 2001b, 2003, Meece, Wigfield and Eccles 1990, Pintrich and DeGroot 1990, Schunk 1990).

Martin (2001, 2002b, 2003a, 2003b) has developed a model of motivation – the Student Motivation Wheel – that reflects the thoughts, feelings and behaviours underpinning academic engagement at school. The model separates motivation into factors that reflect enhanced motivation and those that reflect reduced motivation. These are called 'boosters' and 'guzzlers' respectively. Boosters include self-belief, learning focus, value of schooling, persistence, study management and planning. Guzzlers include anxiety, uncertain control, failure avoidance and self-sabotage. Figure 1 shows the wheel and the facets of motivation that comprise it.

Aims of this paper

The aims of this paper are two-fold. First, it explores a multidimensional model of motivation and examines key gender effects in this model across a large and representative sample of male and female high school students. Second, it presents data from a qualitative study of high school students with a view to identifying key characteristics of teachers and teaching that engage and motivate boys most. Before proceeding further, however, it must be recognised that variation amongst boys can be large as can differences amongst girls. Indeed, to the extent that differences between boys and girls are discussed, differences amongst boys and differences amongst girls must also be appreciated (Gilbert 2000). The treatment of boys and girls as two separate groups in this paper is not to imply that they are two homogeneous groups. However, for the purposes of data analysis to explore the issues under study, the findings need to be disaggregated along gender lines.

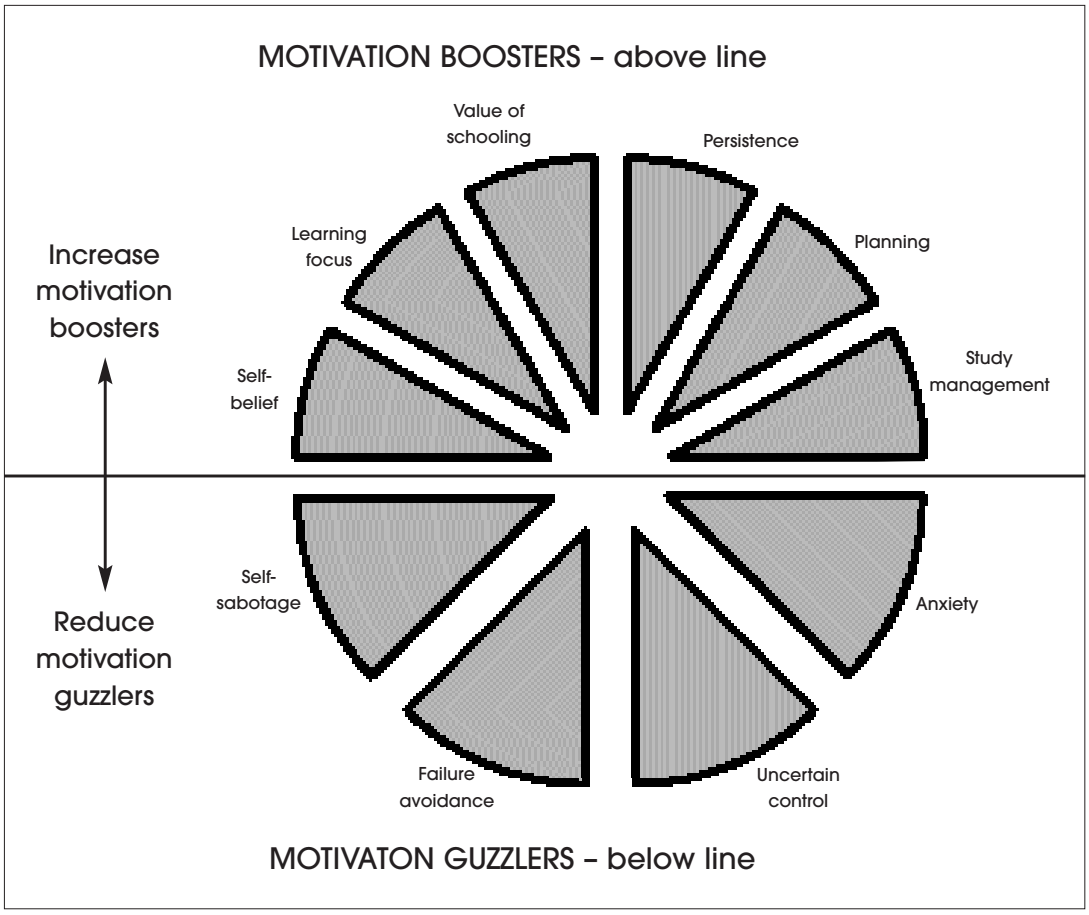

Figure 1: The Student Motivaton Wheel (adapted from Martin 2003)

Study 1: Quantitative analysis of motivation data

Sample

The respondents were 3773 students from thirteen NSW and ACT high schools (nine government, one systemic Catholic, and three independent schools) in Years 7 and 8 (40%), Years 9 and 10 (42%), and Years 11 and 12 (18%). The mean age of respondents was just over 14 years (SD=1.5 years). Twelve schools were located in urban areas of Sydney and Canberra and one was located in a regional area of NSW. Schools primarily drew on lower middle to upper middle-class areas. In total, 43 per cent of students were females and 57 per cent males.

Materials

The Student Motivation Scale is an instrument that measures high school students' motivation. It assesses motivation through six boosters and four guzzlers. Teachers administered the Student Motivation Scale to students during class. The rating scale was first explained and a sample item presented. Students were then asked to complete the Student Motivation Scale on their own and to return the completed instrument to the teacher at the end of class.

Boosters

Boosters are self-belief, learning focus, value of schooling, persistence, planning and monitoring, and study management.

Self-belief (e.g. 'If I try hard, I believe I can do my schoolwork well'): Self-belief is students' belief and confidence in their ability to understand or to do well in their schoolwork, to meet challenges they face, and to perform to the best of their ability.

Value of schooling (e.g. 'Learning at school is important to me'): Value of schooling is how much students believe what they learn at school is useful, important and relevant to them or to the world in general.

Learning focus (e.g. 'I feel very pleased with myself when I really understand what I'm taught at school'): Learning focus is being focused on learning, solving problems, and developing skills. The goal of a learning focus is to be the best student one can be.

Planning (e.g. 'Before I start an assignment I plan out how I am going to do it'): Planning is how much students plan their schoolwork, assignments and study and how much they keep track of their progress as they are doing them.

Study management (e.g. 'When I study, I usually study in places where I can concentrate'): Study management refers to the way students use their study time, organise their study timetable, and choose and arrange where they study.

Persistence (e.g. 'If I can't understand my schoolwork at first, I keep going over it until I understand it'): Persistence is how much students keep trying to work out an answer or to understand a problem even when that problem is difficult or is challenging.

Guzzlers

Guzzlers are anxiety, low control, failure avoidance and self-sabotage.

Anxiety (e.g. 'When exams and assignments are coming up, I worry a lot'): Anxiety has two parts: feeling nervous and worrying. Feeling nervous is the uneasy or sick feeling students get when they think about their schoolwork, assignments or

exams. Worrying is their fear about not doing very well in their schoolwork, assignments or exams.

Uncertain control (e.g. 'I'm often unsure how I can avoid doing poorly at school'): Students are low in control when they are unsure about how to do well or how to avoid doing poorly.

Failure avoidance (e.g. 'Often the main reason I work at school is because I don't want to disappoint my parents'): Students have an avoidance focus when the main reason they do their schoolwork is to avoid doing poorly or to avoid being seen to do poorly.

Self-sabotage (e.g. 'I sometimes don't study very hard before exams so I have an excuse if I don't do as well as I hoped'): Students self-sabotage when they do things that reduce their chances of success at school. Examples are putting off doing an assignment or wasting time while they are meant to be doing their schoolwork or studying for an exam.

Measurement and statistical analysis

Each booster and guzzler comprises four items. To each item, students rated themselves on a scale of 1 ('strongly disagree') to 7 ('strongly agree'). If a student answered less than three items in a subscale, he or she did not receive a score for that subscale. Data were analysed using LISREL 7.2, PRELIS and SPSS for Windows (Version 11). Analyses included confirmatory factor analysis, tests of reliability and analysis of variance (ANOVA).

Confirmatory factor analysis

Before aggregating items to form ten motivation subscale scores, confirmatory factor analysis (CFA) was carried out to justify forming these subscales. CFA was conducted using LISREL 7.2 (Joreskog and Sorbom 1989a, 1989b). A detailed presentation of the conduct of CFA is beyond the scope of the present paper and is available elsewhere (e.g. Bollen 1989, Joreskog and Sorbom 1989a, 1989b, Pedhazur and Schmelkin 1991). Maximum likelihood was the method of estimation used for the models. The raw data were used as input to PRELIS (Joreskog and Sorbom 1988) and a covariance matrix was produced which was subsequently analysed using LISREL. In terms of goodness of fit indices, the Tucker Lewis Index (TLI) is emphasised as simulation studies have shown that it is relatively independent of sample size and also imposes an appropriate penalty for inclusion of additional variables in a given model (Marsh, Balla and Hau 1996). Following Marsh et al. (1996), the Relative Noncentrality Index (RNI) and Root Mean Square Error of Approximation (RMSEA) are also emphasised as measures of goodness of fit. TLI and RNI values above .90 and RMSEA below .05 are typically considered to indicate acceptable fit of the data to the model.

	Self belief (SB)G / B	Value school (VS)G / B	Learning focus (LF)G / B	Planning (PLN)G / B	Study manage (SM)G / B	Persist (P)G / B	Anxiety (ANX)G / B	Uncertain control (LC)G / B	Failure avoid (FA)G / B	Self-sabotage (SS)G / B
SB1	68/66									
SB2	67/69									
SB3	70/64									
SB4	72/73									
VS1		56/53								
VS2		71/70								
VS3		66/64								
VS4		72/77								
LF1			68/64							
LF2			67/70							
LF3			80/75							
LF4			75/78							
PLN1				61/55						
PLN2				77/74						
PLN3				83/81						
PLN4				57/61						
SM1					75/70					
SM2					59/65					
SM3					86/81					
SM4					72/74					
P1						63/54				
P2						71/71				
P3						78/73				
P4						85/79				
ANX1							74/69			
ANX2							71/68			
ANX3							62/66			
ANX4							72/68			
UC1								70/63		
UC2								72/74		
UC3								78/74		
UC4								76/75		
AV1									79/79	
AV2									86/85	
AV3									51/53	
AV4									62/65	
SS1										64/56
SS2										82/74
SS3										84/79
SS4										76/74
Mean	**69/68**	**66/66**	**73/72**	**70/68**	**73/73**	**74/69**	**70/68**	**74/72**	**70/71**	**77/71**

Note: Decimals omitted

Table 1: Factor loadings for the Student Motivation Scale: girls (G)/boys (B)

For both boys and girls, this model yielded an acceptable fit to the data (girls: chi square=2,932.16, df=695, RNI=.92, TLI=.91, RMSEA=.04; boys: chi square=3,047.25, df=695, RNI=.93, TLI=.92, RMSEA=.04). Factor loadings for boys and girls are presented in Table 1.

Descriptive statistics and reliability

Given the strong factor structure for both boys and girls, it was considered appropriate to aggregate items to form subscales. Subscales were formed by generating the mean of the set of four items for each booster and guzzler. This mean was then converted to a score out of 100. All scores out of 100 in this paper are presented as rounded whole numbers. Distribution and reliability statistics for each booster and guzzler are presented in Table 2. The results show that for both boys and girls all boosters and guzzlers are reliable. Distributional data also show that for boys and girls each booster and guzzler is approximately normally distributed.

	Skew		Kurtosis		Cronbach's alpha	
	Girls	Boys	Girls	Boys	Girls	Boys
Boosters						
Self-belief	-.80	-.93	.93	1.32	.79	.78
Value of schooling	-.99	-1.06	1.17	1.48	.76	.76
Learning focus	-.97	-1.00	1.22	1.49	.82	.81
Planning	-.26	-.17	-.37	-.42	.79	.77
Study management	-.70	-.60	.51	.02	.82	.81
Persistence	-.73	-.54	.43	.16	.83	.79
Guzzlers						
Anxiety	-.20	-.01	-.58	-.58	.79	.77
Uncertain control	-.03	.10	-.57	-.55	.83	.81
Failure avoidance	.29	.32	-.45	-.60	.79	.80
Self-sabotage	.62	.44	-.21	-.43	.85	.80

Table 2: Distribution statistics and Cronbach's alphas

Gender and year-level effects

Although the focus of the analysis is on gender effects, it is of interest to explore possible differences between boys and girls as a function of what year level they are in. That is, do gender differences change across year levels at school? This issue was explored using a series of 2 (boy, girl) x 3 (Years 7/8, Years 9/10, Years 11/12) ANOVAs using each of the ten boosters and guzzlers as dependent variables.

	Tests for gender		Tests for year level		Tests for gender x year level	
	F (df)	Effect (with mean/100)	F (df)	Effect (with mean/100)	F (df)	Effect
Boosters						
Self-belief	2.97 (1,3661)	Not significant	31.84 (2,3661)*	J (82) > S (80) > M (78)	6.33 (2,3661)*	See Figure 2a
Value of school	8.71 (1,3665)*	Girls (81) > Boys (80)	105.15 (2,3665)*	J (84) > S (80) > M (77)	12.78 (2,3665)*	See Figure 2b
Learning focus	41.67 (1,3705)*	Girls (83) > Boys (80)	28.09 (2,3705)*	S (83) & J (82) > M (79)	11.31 (2,3705)*	See Figure 2c
Planning	56.04 (1,3676)*	Girls (61) > Boys (56)	51.17 (2,3676)*	S (62) > J (60) > M (55)	4.48 (2,3676)	Not significant
Study management	61.54 (1,3665)*	Girls (72) > Boys (67)	33.20 (2,3665)*	S (72) & J (71) > M (67)	1.67 (2,3665)	Not significant
Persistence	43.86 (1,3682)*	Girls (72) > Boys (69)	53.36 (2,3682)*	J (73) > S (71) > M (67)	4.98 (2,3682)	Not significant
Guzzlers						
Anxiety	116.78 (1,3660)*	Girls (64) > Boys (57)	6.31 (2,3660)*	S (62) & M (60) > J (59)	1.25 (2,3660)	Not significant
Uncertain control	3.03 (1,3733)	Not significant	5.45 (2,3733)*	J (52) > M (51) & S (50)	0.64 (2,3733)	Not significant
Failure avoidance	0.55 (1,3673)	Not significant	18.38 (2,3673)*	J (50) & M (49) > S (45)	2.36 (2,3673)	Not significant
Self-sabotage	30.91 (1,3661)*	Boys (42) > Girls (39)	12.86 (2,3661)*	M (42) & J (41) > S (37)	1.96 (2,3661)	Not significant

* $p<0.005$ J=Years 7 and 8; M=Years 9 and 10; S=Years 11 and 12

Table 3: F-values and the Nature of Statistically Significant Effects

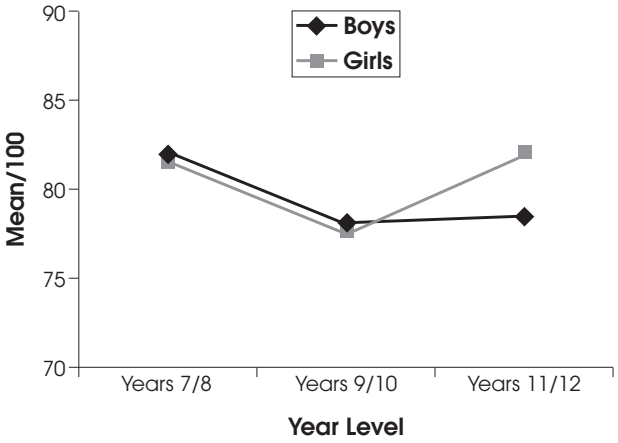

Figure 2a: Gender x Year Level Interaction on Self-Belief

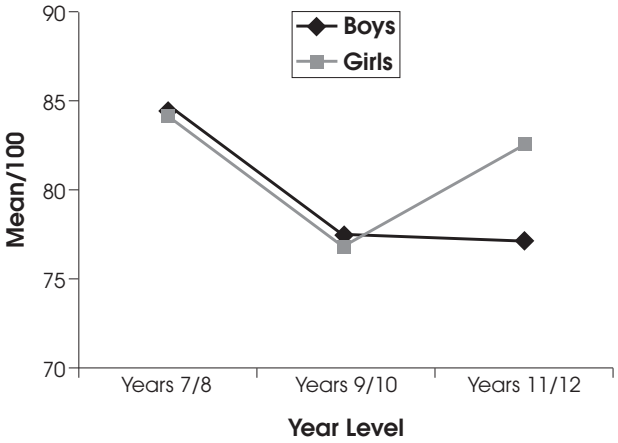

Figure 2b: Gender x Year Level Interaction on Value of School

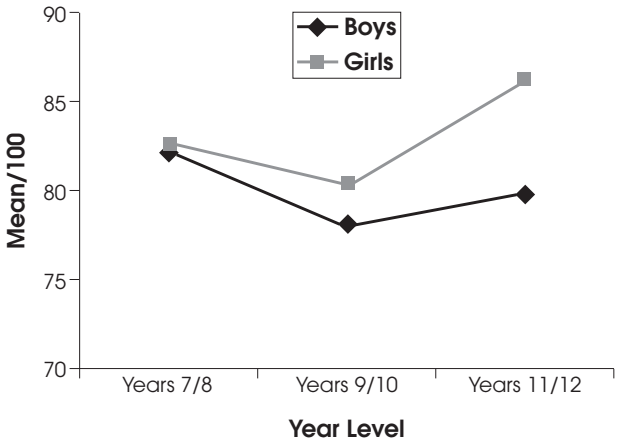

Figure 2c: Gender x Year Level Interaction on Learning Focus

These ANOVAs test for three effects: (a) differences between boys and girls across the entire sample, (b) differences between year levels across the entire sample, and (c) the extent to which there are different gender effects as a function of the year level a student is in. A conservative Bonferroni correction was used to minimise the risk of Type I error by dividing the p-value of 0.05 by the number of tests conducted (10) to yield a revised significance criterion level of .005. F-values and the specific nature of statistically significant effects are presented in Table 3.

These results show that there are gender differences on a number of facets of motivation. In terms of boosters, girls are significantly higher than boys in their belief in the value of school, learning focus, planning, study management and persistence. In terms of guzzlers, girls are significantly higher than boys in anxiety while boys are significantly higher in self-sabotage. Importantly, however, findings in relation to self-belief, value of schooling and learning focus are qualified by an interaction effect. That is, gender differences on these dimensions change as a function of year level. Figures 2a to 2c show the precise nature of these interactions. A clear pattern emerges here: although boys' and girls' motivation on these three dimensions decline in parallel ways in Years 9 and 10, only girls recover in Years 11 and 12; boys' motivation on these three dimensions does not recover – or at least not to the same degree.

Study 2: Qualitative analysis of students' views

Complementing the quantitative data with qualitative insights

Numerous commentators over the past three decades have noted the benefits to be derived from complementary quantitative and qualitative approaches to educational research (Brewer and Hunter 1989, Campbell 1975, Cook and Campbell 1979, Cronbach 1975, Firestone 1987, Gage 1989, Gill 1996, Glesne and Peshkin 1992, Patton 1990). The research to date on student motivation has adopted somewhat more of a quantitative perspective. A qualitative analysis of motivation is not only timely but can add important personal insights into the lived experience of boys that experimental manipulations or psychometric scales have difficulty accessing. Moreover, motivation may be manifested in a variety of ways for a variety of subtle or not so subtle reasons. It is not until individual students are interviewed that the richness of this information can be used to better understand the issues central to this substantive area.

The focus of the qualitative analysis

As the quantitative data above show, there are motivation differences between boys and girls. The question is how to best address these. In the broadest sense, there are three levels at which to intervene: the student level, the class/teacher level and the school level. Rowe (2000, in Hawkes 2001; see also Hill and Rowe 1996, Rowe and Rowe 2002) has shown that the bulk of variance in student achievement is explained by teacher- and classroom-related factors, around one-third of the variance is explained by student characteristics, and a small amount is explained by school-level factors. It therefore follows that the bulk of intervention occurs first at the teacher/classroom level (with all the appropriate school-level support required to do this) and then at the student level. Indeed, in a major analysis of productive pedagogy in Queensland, Lingard and Ladwig (2001) found that there were more differences in pedagogy between teachers than between schools – again demonstrating that the critical point of action is in the classroom with the teacher (see also MacDonald et al. 1999, Rowe 2000). Qualitative work has supported similar conclusions (Martino and Meyenn 2002). In view of these findings, the present qualitative phase focused on aspects of pedagogy that boys report engage and motivate them most.

Sample

Boys were sampled from Year 8 (n=32 students) and Year 10 (n=33 students) in two government high schools. Year-level coordinators were asked to select boys that would reflect the diversity of student engagement at the school. In total, 65 boys participated in interviews or discussion groups. Twenty-one students (n=8 students from Year 8; n=13 from Year 10) were interviewed in pairs. Forty-four students (n=24 from Year 8; n=20 from Year 10) participated in eight discussion groups. As data emerging from interview pairs and discussion groups were largely parallel, the data were analysed together and are presented jointly in this paper. The data reported here are drawn from a larger study into boys' education (Martin 2002a).

Procedure

Quiet offices at each of the two schools were used as the settings for the interviews and discussion groups. Students were welcomed and informed that the researcher was interested in complementing the quantitative data with in-depth interviews that would provide some insight into the personal perspectives of students. Students were informed that the researcher wanted to talk to a broad range of students and that they comprised one component in that range. They were then asked if audio-taping the interview was acceptable to them and were informed that the interview data were confidential and that their names would not be used when reporting extracts from the interviews. Data were collected using a semi-structured interview schedule (see Martin 2002a). The average duration of each interview pair was approximately 30 minutes and the discussion groups averaged 45 minutes.

Results

A number of issues were explored in interviews and focus groups with students. However, central to the issue of pedagogy, students were asked to do the following: 'Please describe the teacher that brings out your best work or keeps you most interested and motivated in school and schoolwork.'

There were some clear and consistent characteristics and practices of teachers that brought out the best in boys and that engaged and motivated them most. It is significant to note that every student was able to identify at least one teacher who was able to hook him into a subject. Ten characteristics or practices were consistently identified as being the reasons why some teachers more than others were better able to engage boys in their schoolwork. They revolved around:

- the relationship between teacher and student
- the teacher's enjoyment of teaching and working with young people
- striking a balance between authority and a relaxed classroom atmosphere
- striking a balance between serious schoolwork and fun
- the teacher's sense of humour
- making schoolwork interesting and fun where possible and appropriate
- providing boys with choices
- explaining work clearly and effectively and aiming for mastery by all students
- broad assessment practices
- variety in teaching material and teaching methods.

Each of these is discussed in turn.

Particularly critical to students' engagement and motivation in a particular subject was their *relationship with their teacher*. Good relationships were characterised by the teacher taking time to get to know them, listening to them, respecting their views, and not treating them as children:

> They know how you're feeling. (Year 8 boy)
>
> That teacher is really understanding. (Year 10 boy)
>
> He knows you a bit better, knows the way you work and that sort of stuff, so he can help you a bit more. (Year 10 boy)

Teachers who engaged the class seemed to *enjoy teaching and working with young people*:

> They just like working with children and they like what they're doing. (Year 8 boy)

> You can tell if they are really interested in it. Some teachers just talk about the facts and they don't have any enthusiasm. (Year 8 boy)

> I like a teacher that enjoys helping kids. (Year 8 boy)

These teachers seem to *strike a good balance* between maintaining authority and creating a relaxed and well-behaved classroom atmosphere:

> Keeps the class under control but not too strict. (Year 8 boy)

> Has a joke with you, but knows when it's time to get down to work and chat a bit more then do some more work. (Year 10 boy)

> She can be a fun-going teacher but she can be strict with the work as well. (Year 8 boy)

These teachers had a *sense of humour* and were able to share this with the boys by laughing at the boys' jokes or sharing jokes of their own. These teachers could also tolerate a bit of fun poked at them and could poke a bit of fun back (without degenerating to sledging):

> Some teachers will laugh at a joke that others would get angry at. (Year 10 boy)

> Tells jokes and laughs at jokes and fits in with the class. (Year 10 boy)

They also seemed to be able to *strike a good balance* between serious/focused schoolwork and fun:

> Just fun, they like to joke around but they know where to draw the line. (Year 10 boy)

Teachers who engaged students were also seen to take the time to try to *make schoolwork interesting* and, where possible, *fun*. This was recognised and appreciated by the boys:

> They're animated, walk around the class and give demonstrations and help students. They make it interesting. (Year 10 boy)

> They will try to motivate us and get us interested. Like in Shakespeare we were bored, but they got us into it by getting us to act out a full scene and that was pretty fun. (Year 10 boy)

> The teacher we have in English tells us why different ways of saying things in the old days makes more understanding of how to talk and write essays today – it wouldn't be interesting otherwise. (Year 10 boy)

Teachers who provided boys with *choices* were particularly valued. Choices gave students some ownership of what they were studying and also provided them with a sense that the teacher respected them:

> Last year I was in an English class where our teacher let us choose what books we did and how we did them. It was really good. (Year 10 boy)

Teachers who engaged students also *explained work carefully* to them and aimed for mastery by all students. In some cases this required individualised attention and boys found this helpful:

> They get you into the work. They help you out. They explain it to you before you do it. They give you a bit more attention. (Year 10 boy)

A few students seemed to benefit from *broad assessment practices* that assessed them in a number of different areas and gave them a chance to be assessed in areas of strength:

> Our English teacher marked everyone differently. Like if we read one book he'd mark one person on a PowerPoint presentation and another person on essays. (Year 10 boy)

Providing *variety in teaching material and method* was also considered important by some students:

> Varying some of the work would be good. Instead of just writing a huge block about a subject, kind of mixing it around. (Year 10 boy)

It was interesting to note that on only one or two occasions did students report (unprompted) that the sex of their teacher was a factor in them being more or less

engaged in a particular subject. When students were specifically asked about this as a factor, many reported that the *sex of the teacher was not an issue*:

> [Whether they are male or female] doesn't matter. I don't mind as long as that person is trying to help me learn. That's all that really matters. (Year 8 boy)

Instead, it often came down to the person:

> I think it comes down to the person. If they were a person that wants to help you learn. (Year 8 boy)

Discussion

Findings of note

The quantitative data showed that girls rate significantly higher than boys in their belief in the value of school, learning focus, planning, study management and persistence. Importantly, although boys' and girls' motivation declines in parallel ways in Years 9 and 10, girls' motivation recovers in Years 11 and 12 whereas the motivation of boys does not recover – or at least not to the same extent. In terms of guzzlers, girls are significantly higher than boys in anxiety while boys are significantly higher in self-sabotage. The qualitative data showed that features of effective pedagogy include: a good relationship between student and teacher, the teacher's enjoyment of teaching and working with young people, the teacher striking a good balance between asserting authority and being relaxed and tolerant, injecting and permitting humour in the classroom, providing boys with choices, making schoolwork interesting and/or relevant, providing variety in content and methods, and respecting boys' opinions and perspectives.

Principles for assisting boys (and all students)

In addition to motivation strategies detailed by Martin (2001, 2002b, 2003a, 2003b), it is important to identify core principles that guide the formulation of such strategies and enhance the likelihood of success when implemented. A vital first principle is the need to actively involve young people in the development and implementation of strategies. As Mclean notes: 'if we attempt to introduce gender reforms without actively involving young people in all aspects of the project – from design to implementation – they will almost inevitably be seen as yet another example of adult power being exerted over young people, and be dismissed accordingly' (1997, p. 63). Indeed, the need to be student-inclusive in program design and delivery is

underscored by students' cynicism of boys' programs reported by Slade. In Slade's large-scale interview study of Australian boys, these students saw boys' programs as 'being devised and put into place to satisfy the interests and preferences of teachers and a small number of influential parents, or to benefit the image of the school and to extend its influence and control in their lives, rather than an expression of their genuine interest in the well-being of boys in education' (2001, p. 17; see also Slade 2002, Slade and Trent 2000).

At a school level, there are principles for action that require consideration. Professional development with all school staff should occur before implementing strategy. It may be sensible for schools to start on a smaller scale with a clearly defined focus and process and not attempt to address all gender-relevant issues at the outset. There is then a need for sustained implementation through broader operational structures such as school policy and procedures and active involvement of the whole school community (Ludowyke and Scanlon 1997). Indeed, Gilbert and Gilbert (1998) found that the most successful programs dealing with boys were part of a wide ranging policy on gender equity and ensured an understanding of the social construction of gender that was integrated with the curriculum.

Motivation and gender construction

A consistent theme in the education of boys is the influence of gender construction on their attitudes, beliefs and behaviours not only in the educational setting but also in other salient domains of their lives. Gender is constructed through complex sets of behaviours, personal qualities, expectations and attitudes regarded as culturally appropriate or socially acceptable (Connell 1998). Connell (1998) reports that schools operate as agents of gender construction through power relations, through division of labour, through symbolisation, through subject offerings and through discipline. According to Connell, students also operate as agents of gender construction through peers who often reinforce heterosexuality and through active construction of masculinity.

Indeed, ideas about gender held by students and teachers can have marked effects on students' behaviour as well as pedagogy in the classroom (Mills 2001). For example, students' beliefs and expectations about what it means to be a boy or a girl influences how they behave, subjects they select, how much they study and attend to these subjects, and what they do after they complete (or leave) school (NSW Department of Education and Training 2000).

It is important that boys understand how masculinity is socially constructed and then look at how this construction can sit 'uncomfortably' with success and motivation at school and in particular subject areas. According to Gilbert, boys 'deserve to engage

with an examination of how they learn about masculinity, in their homes and families, in their peer groups, in the cultural texts that surround them and how they then are encouraged to perform masculinity in school cultures' (1998, p. 22).

Fear of failure and masculinity

One aspect of the present motivation data that may touch on gender construction is that relating to failure avoidance and self-sabotage. These two constructs are underpinned by a fear of failure (Martin 2001, 2002b, 2003b) and a number of commentators have identified fear of failure as being particularly pertinent to boys and their construction of gender. For boys, fear of failure operates across a number of domains. It relates to fear of not living up to popular images of masculinity, fear of being labelled a 'sissy' or seen as feminine in any way (O'Doherty 1994), fear of powerlessness (Mclean 1997), and fear of having their sexuality questioned. In the learning domain, boys have been found to be unwilling to attempt new learning when they are uncertain of success and to be less likely to re-attempt something at which they had previously been unsuccessful (Ludowyke and Scanlon 1997).

Boys' fear of failure can also have the effect of exaggerating their masculinity – referred to by Jackson (1998) as 'hyper-masculinity' – and lead to defensive manoeuvring in the classroom and in assessment situations. Such defensive manoeuvring can take the form of defensive pessimism (setting unrealistically low expectations leading up to performance situations: Martin, Marsh and Debus 2001a, 2001b, 2003, Martin, Marsh, Williamson and Debus 2003, Norem and Cantor 1986a, 1986b), self-sabotage (setting obstacles in the path to success: Berglas and Jones 1978, Martin, Marsh and Debus 2001a, 2001b, 2003, Rhodewalt and Davison 1986, Tice and Baumeister 1990), and even failure acceptance (Covington 1992, 1998, Martin and Marsh 2003, Martin, Marsh and Debus 2001a, 2003). As Jackson comments,

> ... insecure boys, who are very much aware of their vulnerability, strive to display a hyper-masculine performance that will not only defend themselves from the fantasized 'weakness' but also gain the approval of the peer group ... as a result, not working hard at school can be seen as a defensive strategy by some boys to distance themselves from an academic world that is perceived as dangerously 'weak'. (1998, p. 89)

Differences of degree or differences of kind?

The quantitative data presented in this study show that there is certainly a difference of *degree* in boys' and girls' motivation, with boys scoring lower on a number of adaptive dimensions of engagement and girls scoring higher on anxiety. Martin (in press) has explored whether there is also a difference of kind between boys and girls – that is, whether their orientations to school and schoolwork are fundamentally

different. Significantly, he found that in relation to key facets of motivation there is a highly similar factor structure across boys and girls, boys and girls can be grouped into parallel motivation clusters, and boys and girls seem to perceptually locate key motivational dimensions in similar ways. He concluded that there is not so much of a difference in *kind*: although girls have higher levels of motivation than boys on a number of dimensions, the two groups' fundamental motivation orientations do not appear to be markedly qualitatively different. He concluded that this holds implications not only for data analysis but also for programmatic intervention aimed at enhancing or sustaining boys' and girls' motivation.

Limitations and future directions

Although the present data provide a number of new perspectives on the issues of gender and motivation, there are some potential limitations that are important to consider when interpreting findings and which provide some direction for further research. Because the data are derived from self-reports, it is important that future research examines the constructs using data derived from additional sources (e.g. teacher ratings and parent ratings). It is also important to recognise that the measures used in the quantitative component of this paper relate to school as a whole and not particular school subjects. Future research should test these constructs in the context of specific school subjects. Also, as stated at the outset of the paper, it is important to recognise that there can be large differences from boy to boy as there can be from girl to girl. There is scope for more nuanced analysis (see Kenway 1995, Martino and Meyenn 2002) to explore if there are subgroups amongst boys or girls that reflect differences of a kind that were not measured in this study. Also discussed above was the role of gender construction as it relates to Martin's (2001, 2002b, 2003a, 2003b) model of motivation. The present data do not directly inform or invoke gender construction and this may also be a direction for further study – particularly in relation to some qualitative work. Some possibilities might revolve around the above discussion on the construction of masculinity and fear of failure.

Conclusion

In sum, the data presented here contribute to current understanding of gender and motivation, key differences and important similarities between boys and girls, and directions for further work. In identifying specific facets of motivation on which there exist significant gender differences, educators are better placed to provide more targeted strategies to address lack of motivation. The challenge then is to develop programs and strategies that address areas of concern in relation to boys whilst at the same time recognising and maintaining girls' strengths on the same dimensions. When boys and girls are motivated, not only is the educational process a much more

enjoyable one for them but educators are in a markedly stronger position to help them reach their potential and discover a capacity for engagement and achievement that students previously may not have thought possible. There is probably no getting around the fact that this requires a commitment on the part of students and educators over the medium to longer term, but I suggest that it is a commitment that will be well worth it.

Author's note

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