Classroom goal structure and student disruptive behaviour

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**Background.** Achievement goal theory suggests that the emphasis on mastery and performance goals in the classroom (the classroom goal structure) is related to students’ patterns of learning and behaviour. This theory can offer a preventative holistic approach for dealing with students’ disruptive behaviour.

**Aims.** The present study investigates whether the goal structure in the classroom is related to the incidence of disruptive behaviour.

**Sample and Methods.** A total of 388 ninth-grade students from 60 classrooms in five ethnically diverse high schools responded to surveys asking about the perceived goal structures, their personal achievement goals, and their involvement in disruptive behaviour in their maths classroom. Their maths teachers responded to surveys asking about their goal-related approaches to instruction.

**Results.** Using hierarchical linear modelling (HLM), at the student level, being male and having lower achievement was related to reports of disruptive behaviour. In addition, personal mastery goals were related to lower reports of disruptive behaviour and personal performance-approach and performance-avoidance goals were related to higher reports of disruptive behaviour. Disruptive behaviour also varied significantly between classrooms. Aggregated student perceptions of a mastery goal structure were related to a lower incidence, and aggregated student perceptions of a performance-approach goal structure were related to a higher incidence of disruptive behaviour.

**Conclusion.** The implications of the findings to approaches for dealing with disruptive behaviour are discussed.

Achievement goal theory of motivation in education (Ames, 1992a; Anderman & Maehr, 1994; Nicholls, 1989) has focused on the *meaning* that students construe for school and learning (Maehr, 1984). This meaning has been described in terms of the goals that

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are emphasised in the learning environment and that students pursue when engaged in academic tasks (Ames, 1992a; Anderman & Maehr, 1994; Kaplan & Maehr, 1997; Maehr & Midgley, 1991). Two types of goals received most attention: mastery and performance goals\(^1\) (Ames, 1992a). Mastery goals refer to a focus on learning, improvement, and mastering skills, whereas performance goals refer to a focus on social comparison and demonstration of competence. Recently, researchers distinguished between two types of performance goals: performance-approach and performance-avoidance (Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Skaalvik, 1997). Performance-approach goals refer to students’ orientation to the demonstration of high ability. Performance-avoidance goals refer to students’ orientation to avoiding the demonstration of low ability (Elliot, 1997).

In recent years, achievement goal theory has become a dominant perspective for understanding differences in the level and quality of students’ engagement in school (Elliot, 1999; Pintrich, 1994). A large body of research suggests quite strongly that students who adopt mastery goals manifest an adaptive pattern of cognition, emotion, and behaviour. For example, mastery goals have been found to be associated with the use of deep cognitive strategies, self-regulated learning, positive coping with difficulty and failure, and positive emotions towards the task and towards school. In comparison, students who engage in academic tasks with the purpose of demonstrating their ability were found to display a less adaptive pattern of outcomes that includes use of surface cognitive strategies, negative emotions in the face of difficulty, and the use of self-handicapping behaviour such as procrastinating (for reviews see Ames, 1992a; Dweck & Leggett, 1988; Pintrich, Marx, & Boyle, 1993; Urdan, 1997). However, the association between adoption of performance goals and a negative pattern of outcomes was found to be consistent only among students with performance-avoidance goals (Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Skaalvik, 1997). Results concerning performance-approach goals show mixed findings. In several studies, performance-approach goals were found to be related to high achievement and to high expectancies for success. In other studies, these goals were found to be not related to positive or negative outcomes, and in some studies they were found to be related to anxiety and poor retention (e.g., Elliot & Harackiewicz, 1996; Elliot & Church, 1997; Elliot, McGregor, & Gable, 1999; Middleton & Midgley, 1997; Skaalvik, 1997; see Midgley, Kaplan, & Middleton, 2001).

**Personal achievement goals and disruptive behaviour**

A recent study (Kaplan & Maehr, 1999), conducted with sixth-grade middle school students, suggested that mastery and performance goals are also related to students’ disruptive behaviour in the classroom. Disruptive behaviour such as teasing, talking out of turn, getting out of one’s seat, disrespecting others—and more seriously but less frequently—violence and vandalism\(^2\), has been acknowledged recently as a growing problem in schools—indeed as one of the most serious concerns of teachers and parents (Bear, 1998; Elam, Rose, & Gallup, 1996). In their study, Kaplan and Maehr

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\(^1\) Researchers use different names for these goals. Mastery goals are sometimes called ‘learning goals’ or ‘task goals’ and performance goals are sometimes called ‘ego goals’ or ‘ability goals’ (Anderman & Maehr, 1994; Dweck, 1986; Nicholls, 1989).

\(^2\) Whereas there is much public concern around violent behaviour in schools, these behaviours are relatively rare. Most teachers report ‘talking-out-of-turn’ and ‘hindering other children’ as by far the most troublesome disruptive behaviour in their classroom (Doyle, 1986; Wheldall & Merrett, 1988).
(1999) found that mastery goal orientation was negatively related to students’ reports of being disruptive in school. Students’ orientation to performance-approach goals was positively related to reports of disruptive behaviour, but only for African American students. Among European American students, the correlation between performance-approach goals and disruptive behaviour was negative. Students’ orientation to performance-avoidance goals was not included in this study.

It is reasonable that students’ personal achievement goals would be related to their disruptive behaviour. Mastery goals are likely to facilitate a focus on learning that will result in more investment in the academic task and in increased on-task behaviour. As misbehaving students mostly seek to ‘goof off’ or negotiate task requirements (see Cusick, Martin, & Palonsky, 1976; Doyle & Carter, 1984), an increased engagement in the academic task should consequently lead to less disruption. In contrast, performance-avoidance goals are associated with anxiety (Middleton & Midgley, 1997; Skalvik, 1997) and may instigate use of behavioural strategies, such as being disruptive in class, as means for protecting self-worth. A recent study (Midgley & Urdan, 2001) found that performance-avoidance goals were related to students’ reports of using self-handicapping strategies aimed at protecting self-worth such as delaying studying for a test to the last minute. Being disruptive publicly also may provide students a reason other than low ability for being unsuccessful in school (Baumeister, 1997; Covington, 1992). Mastery goals were negatively associated with self-handicapping strategies and performance-approach goals were found to be unrelated to these strategies (Midgley & Urdan, 2001). As personal performance-approach goals are associated with a focus on doing well and also with the belief that low effort indicates high ability (Jagacinski & Nicholls, 1987; Nicholls, 1989), we might find that, overall, performance-approach goals would not show strong relations to disruptive behaviour.

However, of particular interest to the current study, Kaplan and Maehr (1999) also found a relationship between those middle school students’ perceptions of the goal structure in the school—the perceived emphasis on mastery and performance goals in the school—and reports of disruptive behaviour (explaining over 30% of the variance). African American students’ perception of a mastery goal structure in the school was negatively related to their reports of disruptive behaviour, and European American students’ perception of a performance-approach goal structure in the school was positively related to these reports. Students’ perceptions of a performance-avoidance goal structure were not included in this study. A path analysis suggested that students’ personal achievement goals partially mediated the relations between perceptions of the school’s goal structure and disruptive behaviour. However, there was also a direct path from the perceived school goal structure to disruptive behaviour. These findings suggest that the goal structure in the classroom may be related to disruptive behaviour in similar ways to the relations between personal achievement goals and such behaviour, and that these relations may be partially independent of students’ personal goal orientations.

**Disruptive behaviour and educational environments**

Traditionally, disruptive behaviour has been viewed as a characteristic of the individual student, as resulting from a deficiency in the teachers’ skills of classroom management,
or as a combination of these factors (Bear, 1998; Cameron, 1998). Interventions targeting disruptive behaviour have relied primarily on behaviourist strategies such as reinforcing desired behaviour through praise and token economies or eliminating undesired behaviour by using reductive systems such as ignoring, seclusion time, or response-cost lotteries (e.g., Canter & Canter, 1992; Martens & Meller, 1990; Ringer, Doerr, Hollenshead, & Wills, 1993; see Bear, 1998; Cameron, 1998). More recently, some programmes attempting to reduce disruptive behaviour have focused on self-management training (e.g., Anderson & Prawat, 1983; Hoff & DuPaul, 1998).

However, educators and psychologists have realised the limitations of treatment-oriented and behaviourist approaches to dealing with disruptive behaviour (see Doyle, 1990), and recent literature is emphasising the need for a preventative approach—one that takes a holistic perspective on the school environment and teaching practices (Bear, 1998; Butchart & McEwan, 1998; Brophy, 1996; Freiberg, 1999). Achievement goal theory, which emphasises the relations between the characteristics of the educational environment and students’ behaviour, can provide such a comprehensive theoretical and practical preventative framework (cf. Ames, 1990, 1992b; Maehr & Midgley, 1991, 1996). A strong evidence of the relation between the goal structure in the learning environment and the incidence of disruptive behaviour may point to possible effective interventions that will reduce the incidence of these behaviours that are debilitating to all in the classroom.

The goal structure in the learning environment and disruptive behaviour

In the present study we would like to suggest that the emphasis on mastery and performance goals in the classroom affects students’ disruptive behaviour, over and beyond their personal achievement goals. The classroom goal structure represents a myriad of meanings concerning learning and schooling that are emphasised in every aspect of classroom life (Kaplan & Maehr, 1997) and thus would be relevant to each and every student, whether they pursue mastery, performance-approach, or performance-avoidance goals. The meaning of engagement in academic tasks as oriented towards learning and improving or towards the demonstration of ability is negotiated between students and teachers and is influenced by the messages that teachers emphasise (Ames, 1992b; Anderman & Maehr, 1994; Maehr & Midgley, 1996; Patrick, Anderman, Ryan, Edelin, & Midgley, 2001). Classrooms with a differential emphasis on mastery, performance-approach and performance-avoidance goals are likely to differ in the general approaches to instruction and schooling that are taken by teachers (see Ames, 1992b). These aspects of classroom life are likely to establish different norms of behaviour that would affect every student in the environment.

Research on the classroom and school goal structure indeed suggests that mastery and performance goal structures would be related to different behaviour among students. Recent studies support the relationship between the learning environment’s goal structure and the goals that students adopt for academic tasks (Kaplan & Maehr, 1999; Middleton, Gheen, Hruda, & Midgley, 2000; Roeser, Midgley, & Urdan, 1996). Furthermore, studies have also found associations between the learning environment’s goal structure and students’ cognitive and emotive processes that are similar to the associations between personal achievement goals and these processes. A mastery goal structure was found to be associated with use of learning-promoting behaviour (Ames & Archer, 1988; Ryan & Pintrich, 1997) and positive well-being (Kaplan & Maehr, 1999; Kaplan & Midgley, 1999; Roeser et al., 1996), whereas a performance goal structure
was associated with negative patterns of learning (Ryan, Gheen, & Midgley, 1998; Urdan, Midgley, & Anderman, 1998).

We suggest, therefore, that when the emphasis on mastery goals is high—when tasks are meaningful to students, when students have authority over their learning, and when mistakes are considered as part of the learning process (cf. Ames, 1992b)—the norms and values in the classroom would encourage students to display more on-task behaviours and would arouse less anxiety, and therefore less disruptive behaviour. In contrast, when the emphasis on performance-approach or performance-avoidance goals is high, when students are being compared to each other and when high achievement with little effort is valued (cf. Nicholls, 1989), the classroom culture would encourage students to focus on their relative ability and on the amount of effort that they invest in order to succeed. In such a performance goals oriented environment, students would want to avoid displaying high effort and perhaps even be interested in displaying low investment in school. In classrooms with a performance-avoidance goal structure, disruptive behaviour can provide such impression. This may be particularly true in performance-avoidance classroom goal structure in which the value is put on not demonstrating low ability. Thus, we hypothesise that a mastery classroom goal structure would be related to lower levels of disruptive behaviour whereas performance-approach and performance-avoidance classroom goal structures would be related to higher levels of disruptive behaviour, independently of students’ personal achievement goals.

**Gender, ethnicity and disruptive behaviour**

Whereas the assumption underlying this study is that the classroom goal structure may be associated with students’ disruptive behaviour, there are some student characteristics that have been traditionally associated with disruption in school. As discussed above, students’ personal motivational orientations are likely to be related to their disruptive behaviour. Students’ achievement is also likely to be related to their disruptive behaviour. Achievement and disruptive behaviour are thought to have reciprocal effects—students who receive low grades tend to be more disruptive, although this relation may be mediated by students’ motivational orientations as described above.

The literature also suggests that gender is a consistent factor in students’ disruptive behaviour (Cameron, 1998). Boys tend to be more disruptive than girls, and also tend to manifest more aggressive modes of disruption (Wheldall & Merrett, 1993; Wright & Dusek, 1998). Thus, we might expect that students’ gender would be related to their disruptive behaviour in the classroom, with boys found to be more disruptive than girls.

Ethnic background has been also associated with level of disruptive behaviour (Cameron, 1998). Minority students—particularly African Americans—are repeatedly over-represented in receiving discipline referrals and in being suspended (Lee & Slaughter-Defoe, 1995; cf. Cameron, 1998; Doyle, 1990). This has been attributed to various causes including minority students’ alienation from school (Ogbu, 1992) and teacher or school prejudice and racism (Meier & Stewart, 1979 in Schonfield, 1995). It may be that a minority ethnic background would be associated with higher rates of disruptive behaviour.


Method

Participants and procedure
The students in this study participated in a large-scale longitudinal study from fifth to ninth grade examining the relation between the learning environment and adolescent development. The current study was conducted when students were in ninth grade in 113 classrooms from five ethnically diverse high schools in three school districts in southeastern Michigan. Ninth grade students in the United States are, on average, 14 years old. A survey was completed by 507 ninth-grade students. Students were required to have written parental permission in order to participate. Permission was solicited when students were in the fifth grade and 83% received permission. All high school subject teachers were asked to complete a survey. Given that in high school, students have different teachers for different subjects, we thought it important to ask them about one class, and we chose mathematics. We decided to focus on mathematics classrooms because maths is deemed an important subject domain. In addition, more so than other subject domains, maths has been characterised more clearly as performance goals oriented (e.g., Stodolsky, Salk, & Glaessner, 1991). Therefore, in the present study we included only maths teachers who taught ninth grade students in our sample. All but one of these 36 ninth-grade maths teachers completed a survey.

Students and teachers were matched to maths classrooms. Seven students did not indicate either their maths teacher or the period they took maths, so we dropped them from analyses. The students whose maths teacher did not complete a survey also were dropped from the analysis (N students = 36). Classrooms with two or fewer participating students were dropped from the analysis (N classrooms = 49, N students = 76). Classrooms were not independent with respect to teachers because most maths teachers taught several periods a day. This study included 388 students, 25 teachers, and 60 classrooms for analysis. Of these students, 38% were European Americans, 54% African American, 5% Hispanic, 1% Asian American, and 2% were of unknown ethnicity, according to information obtained from school records.

In the spring of 1998, surveys were administered to students in their schools by trained research assistants. Students were informed that participation in the study was voluntary and that their identities would remain confidential.

Measures
The format for all items in the survey was a 5-point scale, ranging from 1 = not at all true through 5 = very true. Principal components analyses with the full sample of ninth grade students and the full sample of high school teachers guided the construction of all scales. Scale items are listed in the Appendix. Final scales were calculated as the mean of item responses. Number of items and the reliability of each scale are reported in parentheses next to each scale.

Students’ disruptive behaviour (five items, $\alpha = .88^4$). Disruptive behaviour was assessed with a self-report scale adapted from one used by Kaplan and Maehr (1999). Items in the scale ask students whether they engaged in behaviour that annoyed the teacher or disrupted class. The decision to use a self-report scale rather than ‘objective’ indicators of disruptive behaviour such as frequencies of certain observed student behaviours or number of discipline referrals is supported by the problematic nature of

$^4\alpha$ refers to reliability measured with Cronbach’s alpha.
these ‘objective’ measures and by the view of disruptive behaviour as dependent on the context and the interpretation of the actors (cf. Martens, 1993). Observed student behaviours may be interpreted differently (i.e., as disruptive or not disruptive) in different classrooms, and a measure of discipline referrals is most often an indicator of more severe occurrences and is usually highly skewed (see Kaplan & Maehr, 1999). In contrast, the self-report scale, which is correlated with number of discipline referrals (e.g., $r = .44$ in Kaplan & Maehr, 1999), manifests better psychometric properties. Items in this measure were phrased to focus on maths classes.

Students’ self-efficacy in maths (five items, $\alpha = .86$). This scale is from the Patterns of Adaptive Learning Survey (PALS; Midgley et al., 1997). It assessed students’ judgments about their own capability to learn and complete their maths work successfully.

Students’ personal achievement goals. Three scales were taken from PALS (Midgley et al., 1997) to assess students’ personal achievement goals for mathematics. Personal mastery goals (six items, $\alpha = .89$) assessed the degree to which students were oriented towards learning and understanding the material in their maths class. Personal performance-approach goals (five items, $\alpha = .73$) assessed the degree to which students were oriented towards outperforming other students or demonstrating how smart they were in maths class. Personal performance-avoidance goals (six items, $\alpha = .83$) assessed how much students were oriented towards avoiding doing worse than other students or avoiding demonstrating low ability in maths.

The classroom goal structure
In this study we focus on the classroom goal structure as implicated by maths teachers’ emphases on mastery and performance goals. We include two different measures of the classroom goal structure, student perceptions of the goals emphasised by their teacher in maths, and maths teachers’ reports of their goal-related approaches to instruction. In both cases these scales focus on what the teacher does and communicates in the classroom. They are expected to be positively correlated, but research indicates that teacher and (aggregated) student perceptions of the classroom do differ (e.g., Fraser & Walberg, 1991; Moos, 1979).

Student reports of classroom goal structures. Three scales, also taken from PALS, assessed students’ perceptions of the achievement goals emphasised by their teacher in maths class. Mastery classroom goal structure (five items, $\alpha = .83$) assessed the degree to which students felt that their teacher emphasised learning and understanding maths as primary goals in the classroom. Performance-approach classroom goal structure (three items, $\alpha = .79$) assessed how true it was that students felt that their teachers emphasised that outperforming other students and showing how smart they are in maths are important goals. Performance-avoidance classroom goal structure (four items, $\alpha = .70$) was a scale that asked students how much they felt that their teacher emphasised the importance of avoiding appearing incompetent and avoiding doing worse than others in class.

Teacher reports of goal-related approaches to instruction. Two scales, also taken from PALS, assessed teachers’ goal-related approaches to instruction. Mastery-focused approaches to instruction (four items, $\alpha = .71$) assessed the degree to which teachers reported emphasising students’ learning, understanding, and enjoyment of the subject matter. Performance-focused approaches to instruction (six items, $\alpha = .68$) assessed the degree to which teachers reported emphasising to students that the goals in the classroom are to get good grades or demonstrate how smart students are compared to each other.
GPA in mathematics. First and second semester maths grades were obtained from school and district records. Grades were transformed to a 13-point scale (13 = A+, 12 = A, 11 = A− to 1 = E/F). The semester grades were averaged to compute GPA in mathematics.

Analysis
We used hierarchical linear modelling (HLM; Bryk, Raudenbush, & Congdon, 1998) to examine relations among classroom characteristics and student characteristics. Whereas OLS regression assumes that individual and group level variables are independent, hierarchical linear models are specifically designed to model both individual and group level relationships simultaneously. Thus, hierarchical models account for the partial similarity of individuals within the same classroom and allow the researcher to assess the degree to which this similarity relates to specific characteristics of the classroom. In addition, HLM procedures provide more stable estimates of regression parameters for each group when compared to OLS methods. Finally, interactional models with variables at both levels of analysis can be constructed to take advantage of the nested nature of the data. One of the primary drawbacks to HLM is pragmatic: it often requires large sample sizes—both of individuals and of groups—for adequate reliability and power to estimate multilevel effects. Thus, HLM is a rather conservative method for estimating the effects of group characteristics and interactional relationships.

To estimate hierarchical relationships, we used restricted maximum likelihood procedures of Hierarchical Linear Modelling (HLM) 4.04 statistical software (Bryk et al., 1998). The first set of HLM analyses investigated whether students’ perceptions of the classroom goal structure (a) were similar within and between classrooms and, if so, (b) were related to teachers’ reports of their goal-related approaches to instruction, over and above students’ personal achievement goals. The second set of HLM analyses investigated whether students’ reports of disruptive behaviour (a) were related to their classroom placement, and, if so, (b) could be explained by characteristics of the classroom goal structure over and above students’ personal achievement goals.

Results
Descriptives and bivariate correlations among variables are presented in Table 1. The correlations suggest that disruptive behaviour was positively associated with being a boy, with low math grades, and with low self-efficacy in maths.\(^5\) Disruptive behaviour was also positively associated with personal performance-approach and performance-avoidance goals and with perceptions of a performance-approach and avoidance classroom goal structure. In addition, disruptive behaviour was negatively associated with a personal mastery goal orientation as well as with a perceived emphasis on mastery goals in the classroom.

Before testing our hypotheses, we wanted to know to what extent students’ reports of disruptive behaviour and the three variables assessing student perceptions of the

\(^5\) ANOVAs testing for differences in level of disruptive behaviour among all ethnic groups found no mean-level differences. T-tests testing differences between African Americans and Euro-American students also found no mean-level differences.
### Table 1. Descriptives and Pearson-R correlations of variables

<table>
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<tr>
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<th>Mean</th>
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<td><strong>Student-level variables (N=388)</strong></td>
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<tr>
<td>1. Gender</td>
<td>0.51</td>
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<td>2. Math GPA in 9th grade</td>
<td>6.00</td>
<td>3.38</td>
<td>0.03</td>
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<td></td>
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<td>3. Math self-efficacy</td>
<td>4.04</td>
<td>0.92</td>
<td>—0.03</td>
<td>0.31</td>
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<tr>
<td>4. Personal mastery goals</td>
<td>3.35</td>
<td>1.04</td>
<td>0.03</td>
<td>0.12</td>
<td>0.50</td>
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<tr>
<td>5. Personal performance-approach goals</td>
<td>2.69</td>
<td>1.08</td>
<td>—0.09</td>
<td>0.07</td>
<td>0.12</td>
<td>0.13</td>
<td>—</td>
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<tr>
<td>6. Personal performance-avoid goals</td>
<td>1.86</td>
<td>0.85</td>
<td>—0.18</td>
<td>—0.18</td>
<td>—0.21</td>
<td>—0.09</td>
<td>0.42</td>
<td>—</td>
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<tr>
<td>7. Student report of disruptive behaviour</td>
<td>2.37</td>
<td>1.09</td>
<td>—0.14</td>
<td>—0.19</td>
<td>—0.17</td>
<td>—0.31</td>
<td>0.12</td>
<td>0.21</td>
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<th>Mean</th>
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<tbody>
<tr>
<td><strong>Classroom-level variables (N=60)</strong></td>
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<tr>
<td>1. Aggregated student perceptions of mastery classroom goal structure</td>
<td>3.62</td>
<td>0.60</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>2. Aggregated student perceptions of performance-approach classroom goal structure</td>
<td>2.08</td>
<td>0.61</td>
<td>—0.14</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Aggregated student perceptions of performance-avoid classroom goal structure</td>
<td>1.87</td>
<td>0.36</td>
<td>—0.18</td>
<td>0.41</td>
<td>—</td>
<td>—</td>
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</tr>
<tr>
<td>4. Teacher reports of mastery goal-related approaches to instruction</td>
<td>3.89</td>
<td>0.78</td>
<td>0.28</td>
<td>0.07</td>
<td>0.02</td>
<td>—</td>
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<tr>
<td>5. Teacher reports of performance-approach goal-related approaches to instruction</td>
<td>3.06</td>
<td>0.82</td>
<td>0.20</td>
<td>0.24</td>
<td>0.26</td>
<td>0.61</td>
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</tr>
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</table>

### Table 2. Intra-class correlation percentages for aggregated student-level predictors and for disruptive behaviour

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unadjusted ICC</th>
<th>Adjusted ICC</th>
<th>Between-group Chi-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disruptive behaviour</td>
<td>7.8%</td>
<td>20.2%</td>
<td>92.18***</td>
</tr>
<tr>
<td>Student perceptions of the class mastery goal structure</td>
<td>17.6%</td>
<td>28.1%</td>
<td>136.46***</td>
</tr>
<tr>
<td>Student perceptions of the class performance-approach goal structure</td>
<td>10.4%</td>
<td>28.7%</td>
<td>103.89***</td>
</tr>
<tr>
<td>Student perceptions of the class performance-avoid goal structure</td>
<td>1.5%</td>
<td>——</td>
<td>59.42 (n.s.)</td>
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</table>

Note. Chi-square values were estimated for all models with 59 degrees of freedom. **p < .01; ***p < .001.
classroom goal structure varied between classrooms. To do so, we conducted fully-unconditional HLM analyses for each of these variables, which partitions estimates of the variance in the outcome to the student-level and the classroom-level. From these variance estimates, we calculated intra-class correlations.

As shown in Table 2, results indicate that students may be more or less inclined to engage in disruptive behaviour depending on the classroom in which they are situated. Intra-class correlations adjusted for attenuated reliability (AICC) suggest approximately 20% of the variance in disruptive behaviour was attributed to the classroom level. Furthermore, students’ perceptions of mastery and performance-approach classroom goal structures varied significantly between classrooms. However, replicating findings reported by Middleton et al. (2000), there was no significant variance between classrooms in students’ perceptions of an emphasis on performance-avoidance goals, so this variable was dropped from all further analyses. AICC indicated that 28% of the variance in students’ perceptions of the mastery goal structure, and 29% of the variance in students’ perceptions of the performance-approach goal structure, was attributed to the classroom level.

Next, we investigated whether students’ perceptions of the mastery and performance-approach classroom goal structures were related to teachers’ reports of mastery-focused and performance-focused approaches to instruction, over and above students’ personal achievement goals. Two HLM analyses were conducted with students’ perceptions of the classroom goal structure as the student-level outcome variable to be explained. Exploratory HLM analyses indicated that the relations of students’ personal mastery, performance-approach, and performance-avoidance goals with their perceptions of the classroom mastery goal structure did not differ between classrooms. Thus, students’ personal mastery, performance-approach, and performance-avoidance goals were centred at the grand mean, and their between-classroom variances in slopes were fixed at zero.

Exploratory HLM analyses indicated that the relation between students’ personal mastery goals and perceptions of the classroom performance-approach goal structure also did not vary significantly between classrooms. The variance of this slope was fixed at zero and students’ personal mastery goals were centred at the grand mean. However, the relations of students’ personal performance-approach and avoidance goals with perceptions of the classroom performance-approach goal structure did vary significantly between classrooms. Personal performance-approach and avoidance goals were centred at the group mean and their slopes were allowed to vary between classrooms. Centring variables helps to correct for problems of multicollinearity in hierarchical models by minimising covariance between the random intercept and slopes, between first-level and second-level variables, and cross-level interactions (Kreft & de Leeuw, 1998, pp. 135–137). Centring variables at the grand mean calls attention to ‘typical’ values for student-level predictors, regardless of classroom membership. Group-mean centring adopts different reference points for effects depending on classroom membership. This form of centring calls attention to context, where the primary interest is in the value of student-level predictors relative to their classroom’s baseline. Results of the final HLM models are presented in Table 3.

Teachers’ reports of mastery-focused approaches to instruction were significantly related to students’ perceptions of a mastery classroom goal structure (b = .27), over and above students’ personal mastery goals (b = .45). Students’ personal performance-approach and performance-avoidance goals were not significant predictors of the perceived mastery classroom goal structure. Teachers’ performance-focused
approaches to instruction were significantly related to students’ perceptions of a performance-approach classroom goal structure (b = .19), over and above students’ personal performance-approach and personal performance-avoid goals (b = .16 and .25). Students’ personal mastery goals were not significantly related to perceived performance-approach classroom goal structure.

Our final analyses investigated whether student reports of disruptive behaviour could be explained by the goal structure of the classroom over and above student demographic and academic characteristics, and their personal achievement goals. Preliminary HLM analyses with a sample consisting only of African American and European American students indicated no significant relation between ethnicity and mean levels of disruptive behaviour, and no significant between-classroom variation in the relation between ethnicity and disruptive behaviour. Therefore, ethnicity was removed from all further analyses in favour of retaining a larger sample of students and
results are shown in Table 4. The between-class variation in student-level variables (gender, grades, students’ self-efficacy in maths, and the three personal achievement goals) were set to zero because preliminary analyses indicated no significant between-classroom variation in their relations with disruptive behaviour. All of the student-level and classroom-level predictors, with the exception of the dichotomous variable assessing gender, were centred at the grand mean.

**Table 4. Parameter estimates of student-level and teacher-level predictors of average student report of disruptive behaviour**

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept: student reports of disruptive behaviour</td>
<td>2.49</td>
<td>2.48</td>
<td>2.48</td>
<td>2.46</td>
</tr>
<tr>
<td><strong>Student-level predictors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-0.25*</td>
<td>-0.24*</td>
<td>-0.25*</td>
<td>-0.24*</td>
</tr>
<tr>
<td>Math GPA in 9th Grade</td>
<td>-0.04*</td>
<td>-0.05*</td>
<td>-0.04*</td>
<td>-0.05*</td>
</tr>
<tr>
<td>Self efficacy in math</td>
<td>0.03</td>
<td>0.07</td>
<td>0.03</td>
<td>0.06</td>
</tr>
<tr>
<td>Student personal mastery goals</td>
<td>-0.33***</td>
<td>-0.33***</td>
<td>-0.34***</td>
<td>-0.32***</td>
</tr>
<tr>
<td>Student personal performance approach goals</td>
<td>0.11*</td>
<td>0.09+</td>
<td>0.11*</td>
<td>0.09+</td>
</tr>
<tr>
<td>Student personal performance avoid goals</td>
<td>0.12+</td>
<td>0.12+</td>
<td>0.13+</td>
<td>0.13+</td>
</tr>
<tr>
<td><strong>Classroom-level predictors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate of student perceptions of classroom mastery structure</td>
<td>-0.27*</td>
<td>-0.32**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggregate of student perceptions of classroom performance approach structure</td>
<td>0.32**</td>
<td>0.26*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher report of mastery goal-related approaches to instruction</td>
<td>-0.08</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher reports of performance goal-related approaches to instruction</td>
<td>0.17+</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi-square estimates of variation between classrooms in disruptive behaviour</td>
<td>92.90*</td>
<td>68.37 (n.s.)</td>
<td>84.67*</td>
<td>63.06 (n.s.)</td>
</tr>
</tbody>
</table>

**Note.** All student-level predictors with the exception of Female were centred at the grand mean. The variances of student-level parameter estimates were set to zero because their associations with student reports of disruptive behaviour did not vary significantly between classrooms. Degrees of freedom for chi-square estimates were as follows: model 1 = 59; model 2 = 57; model 3 = 57; model 4 = 55.

+ p < .09; * p < .05; ** p < .01; *** p < .001.

Model 1 included only student-level variables. Results indicated that reports of disruptive behaviour were significantly negatively related to gender (b = .25) suggesting that boys were more likely to perceive themselves as disruptive than were girls, negatively related to maths GPA (b = -.04), and to personal mastery goals (b = -.33), positively related to personal performance-approach goals (b = .11), and marginally positively related to personal performance-avoidance goals (b = .12). Chi-square analysis indicated that variation in disruptive behaviour between classrooms remained significant after taking into account student-level variables.

In Model 2, we investigated whether the classroom goal structure could explain between-class variation in disruptive behaviour after taking into account the student predictors in Model 1. Since prior analyses indicated that there was significant and substantial agreement among students within classrooms regarding mastery and performance-approach classroom goal structures, we aggregated these reports to the
classroom level and entered them into the HLM model as classroom-level predictors. Since prior analyses indicated that students’ perceptions of a performance-avoidance classroom goal structure did not vary significantly between classrooms, this variable was not used as a classroom-level variable. Disruptive behaviour was significantly negatively related to aggregated perceptions of the mastery classroom goal structure ($b = -0.27$) and positively related to aggregated perceptions of the performance-approach classroom goal structure ($b = 0.32$), over and above students’ personal achievement goals.

Model 3 investigated whether teachers’ reports of approaches to instruction could explain the between-class variation in disruptive behaviour after taking into account student-level predictors. Of these two teacher reports, the performance-focused approach to instruction was marginally significant and positively related to students’ reports of disruptive behaviour ($b = 0.17$). The chi-square estimate indicated that between-classroom variation in disruptive behaviour remained significant.

In Model 4 we investigated whether aggregated student perceptions of the classroom goal structure and teacher reports of goal-related approaches to instruction combined could uniquely explain variation in students’ reports of disruptive behaviour, over and beyond student-level predictors. Results indicated that aggregated students’ perceptions of a mastery classroom goal structure were significantly negatively related to students’ reports of disruptive behaviour ($b = -0.32$), and aggregated students’ perceptions of a performance-approach classroom goal structure were significantly positively related to disruptive behaviour ($b = 0.26$). Teacher reports of approaches to instruction were not significantly related to disruptive behaviour over and above these other variables, with the parameter estimate of reports of performance-focused approaches to instruction dropping from 0.17 to 0.12 from Model 3 to Model 4. In the final model, no significant variation in student reports of disruptive behaviour remained between classrooms.

**Discussion**

When disruptive behaviour is prevalent in classrooms, often teachers are blamed for class mismanagement and students are blamed for lacking social and self-management skills. Recommendations for effective classroom management and discipline most often involve instituting a clear structure of consequences for inappropriate behaviour (e.g., Canter & Canter, 1992; Levin & Nolan, 1991). The present study suggests, however, that focusing on treatment of disruptive behaviour with behaviour modification or with self-management training may be insufficient, and indeed, might represent a misguided approach for dealing with the phenomenon.

The findings of this study suggest that the level of student disruptive behaviour varies between classrooms, and that the classroom culture (Kaplan & Maehr, 1997)—and more specifically, the classroom goal structure—is an important predictor of this variance. In classrooms where students’ average perceptions suggest that demonstration of ability and doing better than others is valued, level of disruptive behaviour is likely to be high. In contrast, in classrooms where students’ average perceptions suggest that the values emphasised are of learning, understanding and improving over past performance, the level of disruptive behaviour is likely to be low. Indeed, the classroom goal structure variables explained all the variance in level of disruptive behaviour between classrooms in our sample.
Thus, in contrast to conventional approaches to classroom management that adopt a narrow ‘pathological’ (Beyer, 1998) perspective on students’ disruptive behaviour, the present study offers a wider perspective that points to the relation between the meaning of learning and of success that is emphasised and the level of students’ disruptive behaviour in the class. This perspective suggests that rather than adopting harsher rules and emphasising control over student behaviour in order to lower the level of disruption, teachers should consider and modify the messages that their practices send to students with regard to what is important in school. The findings of this study point to the possibility that teachers’ concern with disruptive behaviour is high mostly in performance-oriented classrooms. If classrooms emphasise mastery goals, students would be less likely to disturb the lesson, get into trouble, or annoy the teacher, and teachers would be less occupied by disruptive behaviour. Therefore, rather than relying on behaviour modification and on a clear set of rules that students must follow—practices whose long-term effects and the educational goals that they promote are questionable (McCaslin & Good, 1992; Rohrkmper, 1984)—teachers should attempt to make their classrooms more mastery oriented.

Classrooms that emphasise mastery versus performance goals differ on many dimensions including the types of tasks that students are asked to engage in, the way that student participation is facilitated, and the ways by which students are recognised and evaluated (Ames, 1992b; Meece, 1991). In mastery oriented classrooms, these practices emphasise to students that their main purpose in being in school is to learn, improve, and master the material, rather than to demonstrate high ability and conform to the teachers’ goals. One way by which mastery oriented and performance oriented classrooms are likely to differ, for example, is in the definition of legitimate and inappropriate behaviour for engagement in tasks. Whether behaviour is considered disruptive or not depends on a process of social negotiation between the teacher and the students rather than on objective criteria (e.g., Arieli, 1995; Denscombe, 1985; Woods, 1986). Thus, whereas being violent and abusive would constitute an unacceptable behaviour in almost all classrooms, the definition of behaviours such as talking-out-of-turn and getting out of one’s seat may be more flexible and would depend on a dialectical process between the teacher’s instructional beliefs and strategies and students’ background and norms of behaviour. Teachers who emphasise learning and improvement hold beliefs (Marachi, Gheen, & Midgley, 2000) and employ instructional strategies that allow more active student participation and interaction and that would necessitate a more tolerant approach towards talking and moving (cf. Ames, 1984; Blumenfeld et al., 1991; Blumenfeld, Puro, & Mergendoller, 1992; Patrick et al., 2001). In contrast, teachers who emphasise standards and performance hold beliefs (Marachi et al., 2000) and employ instructional strategies that are controlling and less tolerant towards students (Deci, Spiegel, Koestner, & Kauffman, 1982; see also Corrie, 1997). PUB

The finding that teachers’ reports of their goal-oriented approach to instruction were significantly related to their students’ aggregate perceptions of the classroom goal structure provides support for the teachers’ role in affecting the classroom goal structure. Furthermore, teachers’ reports of performance-oriented approaches to instruction were related to students’ level of disruptive behaviour—a relation that

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6 A strong emphasis on mastery goals that is associated with acceptance of a wider variety of behaviour as on-task does not mean that such a classroom is permissive or tolerant of off-task behaviour. Indeed, in mastery-oriented classrooms that facilitate deep learning, teachers put a strong emphasis on student involvement in the task (Blumenfeld et al., 1991).
became non-significant when students’ aggregate perceptions were introduced, suggesting a mediated relationship.

It is important to note that the relations between the classroom goal structure and level of students’ disruptive behaviour were found after controlling for the effects of students’ gender, grades, self-efficacy, and personal achievement goals. Level of disruptive behaviour in classrooms may vary as a consequence of unequal distribution of students with characteristics that are related to disruptive behaviour. As expected, being a boy and having low grades and low self-efficacy were related to higher reports of disruptive behaviour. In addition, mastery goals were related to lower disruption, whereas personal performance-approach and performance-avoidance goals were related to higher disruption. Our findings that the classroom goal structure was related to level of disruptive behaviour independently of students’ characteristics suggest that a mastery classroom goal structure would be associated with lower level of disruption and a performance-approach classroom goal structure would be associated with higher level of disruption in classrooms of diverse student bodies. Future research may want to confirm these results by investigating the level of disruptive behaviour of the same students across classrooms with different goal structures. In addition, the findings in the present study came from maths classrooms—a subject domain that is often characterised as performance goals oriented (Stodolsky et al., 1991). Future research should investigate the relations of the classroom goal structure and disruptive behaviour among the same students in other domains as well. Furthermore, future research should also examine possible interaction effects of goal emphases on the level of students’ disruptive behaviour in class.

Whereas students’ personal achievement goals were found to be associated with different reports of disruptive behaviour, our predictions regarding these relations received only partial support. As hypothesised, the findings suggest that when students are oriented towards understanding the material and improving over past performance they would be less likely to engage in behaviour that would disrupt the class. This finding is of particular interest as it indicates that facilitating such an orientation, rather than forcing students to comply to norms through threats of punishment or promises of rewards, would be a beneficial strategy for dealing with individual students who are disruptive. Again as hypothesised, the findings suggest that holding performance-avoidance goals are associated with higher disruptive behaviour. Performance-avoidance goals—being concerned with appearing unable—are likely to be associated with a sense of threat to self-worth. When students are concerned that they might display low ability, disruptive behaviour may operate as a self-handicapping strategy—it could provide a reason for failure that is not low ability.

Finally, and unlike our hypothesis, there was no difference between performance-approach goals and performance avoidance goals in their relation with disruptive behaviour. Performance-approach goals—being oriented towards demonstrating high ability in relation to peers—was also associated with being disruptive in class. For performance-approach oriented students, success in school that is accompanied with being disruptive may have an added value as it could indicate a particularly high ability. This finding is particularly interesting since some researchers argue that performance-approach goals might be beneficial in certain contexts, for example, in performance-oriented learning environments (Elliot & Harackiewicz, 1996; Harackiewicz, Barron, & Elliot, 1998). Our findings indicate, however, that at least during the early years of high school, performance-approach goals—whether as an environmental emphasis or a personal achievement goal—may facilitate disruptive behaviour in class (see also
Kaplan & Maehr, 1999). Trying to motivate students to do better than their peers is not likely to be an effective way for reducing the level of disruptive behaviour in the classroom.

Gender was found to be related to disruptive behaviour with boys being more disruptive than girls. Ethnicity, however, was found to be unrelated to disruptive behaviour—a positive finding that challenges a prevailing assumption, but may be unique to this sample. Recently, researchers have been arguing that teachers’ misperception of minority students’ behaviour is an important factor in the difference in rates of disruption between European Americans and minority students (Gilborn, 1993; cf. Au & Kawakami, 1994). Future studies may want to examine differences in definition of acceptable and unacceptable behaviour as it relates to behaviour that is more common among boys and minority students. Mastery-oriented classrooms should accept a wider variety of behaviour that is culturally compatible with learning and adaptive engagement.

In conclusion, the present study adds support to an emerging perspective on classroom management that views disruptive behaviour as an aspect of the classroom culture (cf. Butchart & McEwan, 1998). It suggests that it may be that the prevalence of disruptive behaviour in schools and the popularity of treatment-oriented intervention programmes are due to the high emphasis in schools on the value of demonstrating ability relative to others. This study joins many others (see Urdan, 1997) that have pointed to the benefits of constructing learning environments in which school is thought of as a place where learning, understanding, improvement, and personal and social development are valued and in which social comparison of students’ ability is de-emphasised.

Acknowledgement

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References


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Appendix

**Items and scales in the study**

**Students' disruptive behaviour** (5 items, \( \alpha = .88 \))

1. My math teacher gets upset with me sometimes.
2. I sometimes get into trouble in math class.
3. I sometimes behave in a way that annoys my math teacher.
4. I sometimes don’t follow my math teacher’s directions.
5. I sometimes disturb the lesson during math class.

**Students' self-efficacy in maths** (5 items, \( \alpha = .86 \))

1. I’m certain I can master the skills taught in math this year.
2. I can do even the hardest work in my math class if I try.
3. I can do almost all the work in math if I don’t give up.
4. Even if the work in math is hard, I can learn it.
5. I’m certain I can figure out how to do even the most difficult math work.

**Students' personal achievement goals**

**Personal mastery goals** (6 items, \( \alpha = .89 \))

1. I like math work that I’ll learn from, even if I make a lot of mistakes.
2. An important reason I do my math work is because I like to learn new things.
3. I like math work best when it really makes me think.
4. An important reason why I do my math work is because I want to get better at it.
5. I do my math work because I’m interested in it.
6. I do my work in math because I want to learn as much as possible.

**Personal performance-approach goals** (5 items, \( \alpha = .73 \))

1. I would feel really good if I were the only one who could answer the teacher’s questions in math class.
2. I want to do better than other students in my math class.
3. I would feel successful in math if I did better than most of the other students in the class.
4. I’d like to show my teacher that I’m smarter than the other students in my math class.
5. Doing better than other students in math is important to me.

**Personal performance-avoidance goals** (6 items, \( \alpha = .83 \))

1. It’s very important to me that I don’t look stupid in my math class.
2. An important reason I do my math work is so that I won’t embarrass myself.
3. The reason I do my math work is so the teacher doesn’t think I know less than others.
4. The reason I do my math work is so others in the class won’t think I’m dumb.
5. One reason I might not participate in math class is to avoid looking stupid.
6. One of my main goals in math is to avoid looking like I can’t do my work.

**Student reports of classroom goal structures**

*Mastery classroom goal structure (5 items, \( \alpha = .83 \))*
1. My math teacher thinks mistakes are okay as long as we are learning.
2. My math teacher wants us to understand our work, not just memorize it.
3. My math teacher really wants us to enjoy learning new things.
5. My math teacher gives us time to really explore and understand new ideas.

*Performance-approach classroom goal structure (3 items, \( \alpha = .79 \))*
1. My math teacher points out those students who get good grades as an example to all of us.
2. My math teacher lets us know which students get the highest scores on a test.
3. My math teacher tells us how we compare to other students.

*Performance-avoidance classroom goal structure (4 items, \( \alpha = .70 \))*
1. My math teacher tells us that it is important that we don’t look stupid in math.
2. My math teacher says that showing others that we are not bad in math should be our goal.
3. My math teacher tells us it’s important to join in discussions and answer questions so it doesn’t look like we can’t do the work.
4. My math teacher tells us it’s important to answer questions in class, so it doesn’t look like we can’t do the work.

**Teacher reports of goal-related approaches to instruction**

*Mastery-focused approaches to instruction (4 items, \( \alpha = .71 \))*
1. I make a special effort to recognise students’ individual progress, even if they are below grade level.
2. During class, I often provide several different activities so that students can choose among them.
3. I consider how much students have improved when I give them report cards grades.
4. I give a wide range of assignments, matched to students’ needs and skill level.

*Performance-focused approaches to instruction (6 items, \( \alpha = .68 \))*
1. I give special privileges to students who do the best work.
2. I display the work of the highest achieving students as an example.
3. I help students understand how their performance compares to others.
4. I encourage students to compete with each other.
5. I point out those students who do well as a model for the other students.