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ABSTRACT

This paper presents findings of a study that used goal orientation theory as a guiding framework for a collaborative effort with middle school principals, teachers, and parents over a 3-year period. The intervention sought to change policies and practices so that they would reflect more of a task-goal orientation and less of an ability-goal orientation. The study assessed students' perceptions of the goal emphases in their classrooms; their personal orientation to task, ability, and extrinsic goals; their reported use of deep processing strategies; and their academic efficacy beliefs in mathematics and English 1 year before the transition to middle school and again at the end of the sixth and seventh grades in both the "demonstration" school and a comparison school. Fifth-grade students scheduled to attend the demonstration school and students scheduled to attend the comparison school demonstrated no differences on any of the measures. After the transition, students in the demonstration school exhibited a more positive profile of personal goals, efficacy beliefs, and perceptions of the classroom goal structure than did students in the comparison school. Results are discussed in terms of implications for middle school reform and with regard to the use of goal-orientation theory to guide school reform efforts. Five figures and four tables are included. (Contains 71 references.) (LMI)

Running head: Effect of School Transitions

School Reform and the Transition to Middle School

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Abstract

Using goal orientation theory as a guiding framework, we collaborated with middle school principals, teachers, and parents over a three year period to change policies and practices to reflect a task goal orientation more, and an ability goal orientation less. We assessed students' perceptions of the goal emphases in their classrooms; their personal orientation to task, ability, and extrinsic goals; their reported use of deep processing strategies, and their academic efficacy beliefs in math and English one year prior to the transition to middle school, and again at the end of the sixth and seventh grades in both the "demonstration" school and a comparison school. There were no differences between students scheduled to go to the demonstration and comparison schools on any of the measures when they were in the fifth grade. After the transition, students in the demonstration school exhibited a more positive profile of personal goals, efficacy beliefs, and perceptions of the classroom goal structure than did students in the comparison school. Results are discussed in terms of implications for middle school reform, and with regard to the use of goal orientation theory to guide school reform efforts.

Declining Motivation After the Transition to Middle School:

Schools Can Make a Difference

Observant parents, many teachers, and an occasional social commentator have noted that the transition to middle level schools is a time of declining motivation for many young adolescents. Even "good" students may come to dislike school and avoid studying. Those who like school may like it for reasons that have little to do with academics: for friendships, sports, quasi-romantic encounters, a place to be and be seen. On the one hand, these changes may generate comments about a stage when the "hormones reign -- or rage" and the "brain is drained," as we heard a middle school administrator say once. On the other hand, such changes in behavior and attitude have occasioned calls for school reform (e.g., Carnegie, 1989; Clark & Clark, 1993; Midgley, 1993).

Of course, researchers have attended to this "problem" as well. Numerous studies suggest that academic motivation and performance decline during this educationally crucial period (e.g., Eccles & Midgley, 1989; Harter, Whitesell, & Kowalski, 1992; Simmons & Blyth, 1987; Seidman, Allen, Aber, Mitchell, & Feinman, 1994; Wigfield, Eccles, MacIver, Reuman, & Midgley, 1991). The period is pivotal for a number of reasons, including the fact that academic decisions are made that may have enduring consequences. Turning away from or being "turned off" by academic endeavors in the sixth or seventh grades can influence course and career choices, and may ultimately lead to undesirable "alternative" endeavors. So, it is hardly a matter to be taken lightly. Indeed, it should be a high priority to determine the conditions that contribute to this change in beliefs and behaviors. In addition, researchers and practitioners need to come together to develop preventative measures.

Eccles, Midgley, and their colleagues (e.g., Eccles & Midgley, 1989; Eccles et al., 1993) were among the first to argue that a decline in motivation during early adolescence is not inevitable or uncontrollable. Rather, they indicated that the problem was rooted in what many middle grades students experience in schools at this stage---and that this experience is subject to variation. More specifically, they pointed out that the nature of the learning environment in middle and junior high schools is often counter to the needs and orientations of young adolescents: a classic stage-environment mismatch was at the core of the problem. Thus, during the early adolescent years, youth seek to be independent and autonomous (e.g., Brown, 1990; Carnegie, 1989; Eccles & Midgley, 1989; Erikson, 1968; Simmons & Blyth, 1987; Steinberg, 1990). However, the typical middle school is characterized by rules, control, and a stress on "discipline" with relatively few opportunities given students to make important, autonomous decisions (Eccles & Midgley, 1989; Midgley, Feldlaufer, & Eccles, 1988). The child of this age is struggling with questions of sense of self, competence, and identity, yet the system places her in contexts where sense of competence may be undermined and identity threatened (Maehr & Anderman, 1993; Midgley, 1993). Moreover, instead of support from adults in school at this time, teachers are seen as more remote and uncaring -- seeming to know but a few students well (Feldlaufer, Midgley, & Eccles, 1988; Midgley, Feldlaufer, & Eccles, 1989). In short, the environment of many schools attended by early adolescents is at distinct variance from what would be optimal for this stage of development. This research and the perspective it offered opened up a dialogue on how school reform might facilitate student motivation and learning.

Compatible with the earlier argument of Eccles and Midgley, more recent research within the context of "goal orientation theory" has provided an enhanced perspective on how the learning context affects motivation during adolescence (e.g., Ames & Archer, 1988; Anderman & Maehr, 1994; Midgley, 1993). Briefly, the basics of goal orientation theory revolve around

questions of how purposes or goals mediate the direction and quality of investment. Goal theorists are not only interested in what the individual chooses to do, but how she does it. Two goals figure most strongly and importantly in the shaping of engagement in school contexts: task and ability[1]. When students are oriented to task goals they are mainly concerned with learning for the sake of learning, and strive to master tasks, to improve, and to develop intellectually. Such students are interested in problem solving, novel tasks, and challenging situations. Task-focused students are likely to attribute their success to effort. In contrast, when students are oriented to ability goals, they are mainly concerned with demonstrating their ability or concealing a lack of ability (Ames, 1992; Dweck & Leggett, 1988; Maehr & Pintrich, 1991).

These goal orientations have important, indeed profound effects, not only on the direction but also on the quality of action, affect, and cognition (Anderman & Young, 1994; Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1988; Nolen & Haladyna, 1990; Pintrich & De Groot, 1990; Pintrich & Garcia, 1991). In particular, evidence strongly suggests that a task goal orientation overall is associated with more positive patterns of learning than an ability goal-orientation. For example, research has found that the adoption of task-focused goals is related to the use of deep cognitive processing strategies (e.g., Nolen, 1988), higher levels of academic efficacy (Midgley, Anderman, & Hicks, 1995), and positive achievement beliefs (Ames & Archer, 1988). In turn, these beliefs and behaviors are related to progress in learning and school achievement (e.g., Bandura, 1989; Schunk, 1985).

Recently goal orientation theory has been expanded to provide a perspective on how school contexts influence the adoption of goals. Classroom and school contexts are venues in which goals are adopted, possibly constructed or reconstructed. Ames (1990) demonstrated that as classroom activities change in the direction of emphasizing task (mastery) goals more and ability (performance) goals less, student motivation is likely to increase. Maehr & Fyans (1989; Maehr, 1991) reported that not only classrooms but the context of the school as a whole may operate in a similar fashion, especially at the upper grades. Finally, it is likely that schools can change their contexts or cultures---the relative emphases they place on task and ability goals. Goal emphases have been tied to common policies and practices found in schools---policies and practices over which the school is likely to have considerable jurisdiction (Ames, 1990; Elmore, 1995; Maehr, Midgley, & Urdan, 1992; Midgley, 1993). For example, policies on how to evaluate, recognize, and group students can emphasize task or ability-focused goals. Grouping of students on the basis of their ability, as measured by some standardized examination, is likely to emphasize ability goals. In contrast, grouping practices that are based on students' interests or on the need to master certain skills, are likely to emphasize task goals (cf., Urdan, Midgley, & Wood, 1994).

Policies and practices in middle schools are likely to differ in significant ways from those in elementary schools (Eccles & Midgley, 1989; Eccles et al., 1983; Midgley, 1993), with middle schools stressing ability goals more and task goals less than is the case in elementary schools. For example, Midgley and her colleagues (Midgley et al., 1995) compared the perceptions of elementary students and teachers to those of middle school students and teachers. Elementary students and teachers perceived that their schools emphasized task goals more and ability goals less than did middle school students and teachers. In addition, elementary teachers reported that they used instructional practices that emphasized task goals, and endorsed task-focused goals for their students more than did middle school teachers. What does that mean for students who move from one school level to the other? Typically they will experience a

[1]The literature employs varied terms in designating these two goals. We have adopted terminology that was most conformable for our school collaborators.

different goal emphasis in the academic environment -- with predictable negative effects on the degree and quality of motivation for learning.

Recently, Maehr, Midgley, and their collaborators (e.g., Collopy & Green, 1995; Maehr & Anderman, 1993; Maehr & Midgley, 1991; Maehr, Midgley, & Urdan, 1992; Midgley, 1993; Urdan, Midgley, & Wood, 1995) used these findings as the basis for collaborative school reform efforts. This article briefly describes one such attempt to collaborate with school leaders to move toward an emphasis on task goals and move away from an emphasis on ability goals, with a specific expectation of enhancing student motivation. Further, it presents an evaluation study associated with this collaborative intervention, one that focused especially on gathering quantitative data on motivational patterns exhibited by students enrolled in a demonstration and a comparison school.[2]

The Collaborative Intervention

The Site

The school that was selected for the collaborative intervention was one of two middle schools in a school district serving a largely European-American, working class community. The primary employer of families in this district was the automobile industry and the vagaries of that industry were a continual presence in the life of the community and the lives of those who composed that community. At the time the intervention was initiated, many parents were on temporary, if not continuing "lay off." Teachers and administrators in the school were very sensitive to the need for financial support from the community, as exhibited by voters at the polls. They were also very mindful of the need for support from their own school board and the superintendent and his colleagues. These factors regularly emerged in our discussions in the course of the collaborative intervention. But in broader terms, the school, while perhaps not prototypical, was fairly much representative of working class schools to be found in almost any similar metropolitan area.

Objectives

The purpose of the intervention was to maintain and enhance an emphasis on task goals in the school and reduce the emphasis on ability definitions. Instrumental to that, we and our school collaborators focused on changing or modifying school practices and policies to accord better with the message that school was about understanding, mastery, improvement, and creating a continuing investment in learning as worthy in its own right (task goals). This of course also meant working at the same time toward reducing the incidence of practices and policies that communicated to students that schooling was really about demonstrating one's ability vis a vis others (ability goals).

The Strategy

The strategy employed is described in greater detail elsewhere (Anderman & Urdan, 1995; Maehr & Anderman, 1993; Maehr, Midgley, & Collaborators, in press; Urdan, Midgley, & Wood, 1995). Briefly, it consisted of several major features.

Collaborative in nature. The intervention was approached from the perspective that one cannot and should not try to impose school change. It must be a collaborative process in which

[2] The intervention is described in greater detail in Maehr, Midgley, & Collaborators, in press. Other evaluative studies are also presented there.

"outsiders" may assist in diagnosing the need for change, specifying the direction it should take and the processes to be employed. Finally, however, the leadership and staff in the school make the decisions, take the action---and carry the ultimate stamp of approval or veto. Given this general orientation, we approached a middle school with our general interest in applying goal theory (explained in greater detail and more operational terms) in changing the school environment to enhance student motivation and learning. We emphasized that while we had a theoretical framework, the school staff would have major responsibility in determining how and when that framework would be applied. We[3] emphasized that each of us had skills and knowledge to bring to the table and that through dialogue and cooperative effort, we could forge a school culture that could lead to enhanced student investment in learning. School leadership and staff recognized a need for re-focusing their efforts, but emphasized that they also had an agenda. In broad outline, if not in many of the operational details, that agenda was not all that dissimilar from ours. They not only wanted to enhance student motivation, they recognized that some of their practices might in fact be counter to this goal. With this tentative commitment to similar ideas and objectives, the collaboration began.

The dialogic process. The process consisted of regular meetings, first with a school improvement team and an assistant principal assigned to the task. The dialogue occasionally moved beyond this selected (by the principal) group to include meetings with more of the school staff and smaller meetings with groups concerned with special issues, such as reorganizing to divide the school into smaller learning units. Of course, it involved informal meetings with individuals in the halls or in classrooms. In fact, various members of the University team visited the school on a regular basis, including attending after school events and even the end-of-year "camp-out".

The primary task of the University team was to explicate the relevance of goal theory to the construction of an optimal school environment. We did this primarily as staff brought up specific "motivational problems." There was little opportunity for, and even less interest in, long discourses on the tenets of the theory and supportive findings. The explication of theory was handled in response to specific and real problems. And in retrospect, this may well be the most authentic way to describe theory to any one or group not living in the world of the theorist-researcher. This sometimes very intense dialogue continued over the course of three years. It was punctuated by special workshops, attendance at conferences of relevance at other sites, and visits of an "expert" or two, but the dialogue was largely centered in the regular, once a week after school meetings. No special resources were provided by the University group, though in the course of the effort, central administration made some funds available for school reform--to all schools manifestly working toward reform, including the other middle school in the district that served as the "comparison" for evaluation purposes.

A focus on practices associated with students' definitions of school purposes. While the ultimate objective was enhancing student motivation, the assumption was that this would be facilitated by changing the way students saw school, specifically how they saw school and school experiences as stressing task and ability purposes. The focus of the intervention was on school practices and policies that were likely to be instrumental in creating these perceptions on the part of students. Previous research by ourselves and others (cf. for example, Ames 1990; Epstein, 1989; Maehr & Midgley, 1991; Maehr & Anderman, 1993) suggested the types of policies and practices that would be most critical in this regard. This background provided a perspective, but it was and had to be complemented by the dialogue with our practitioner

[3]The shorthand "we" refers to the University based collaborators, "they" to the school-based collaborators.

collaborators. What emerged was not so much a different kind of taxonomy of critical practices and policies, as a different and enriched understanding of the shapes these take and the influences they could have. In Table 1, we use Epstein's (1989) TARGET acronym to describe and give examples of dimensions of the policies and practices which influence student motivation. The concepts listed in Table 1 serve only as a suggestion of the many issues around which dialogue occurred---and to which change was directed.

An assumption that the problem is systemic. Many, if not most, proposals for changes in schools deal with one particular innovation with little consideration of the organization as a totality. Our approach was specifically and directly concerned with the school as an interrelated system. Indeed, we talked about the intervention as a change in the "culture" of the school, specifically the learning culture to be experienced by students (cf., Maehr, 1991; Maehr & Fyans, 1989). The "learning culture" experienced by students could not be limited to one classroom or even to classrooms. Introducing an instructional innovation in teaching science, examining grading practices in literature classes or grouping practices in math can seldom be done without system-wide effects. More obviously, restructuring to accommodate team teaching and to foster integrated instruction in social studies, literature, and science will impact the teaching of math, physical education, art, and music. In many cases, such innovations will not even be attempted without wide approval across the various subsystems that compose the organization.

Changes in Policies and Practices

Even within this relatively short period of collaboration, a number of significant changes in policy and practice occurred in the demonstration school. The leadership and staff not only discussed issues, they acted---and to a degree they acted in a way that was in accord with enhancing task and minimizing ability goal orientations. The actions taken are summarized in Table 1 and described in greater detail elsewhere (Maehr, Midgley & Collaborators, in press). Not specified in the table is the fact that as school-wide changes were made, certain teachers began parallel examinations of their individual approaches to instruction and classroom management. We were unable to document the degree to which this occurred in any systematic way, but were pointedly aware that in the focus on what the school was about, teachers regularly brought the discussion back to the level of the classroom, what should be done there--and regularly described what they were doing in this regard. Therefore, there was good reason to believe that school-wide initiatives were complemented by classroom level changes, and in many cases were first experienced by students at that level. It was our hope that these school level and classroom level changes would impact the students, especially their perceptions of the goal emphases in the classroom, their personal orientation to task vs. ability goals, their academic beliefs and behaviors. Whether such external changes in fact translated into changed student views, of course, is the central question at issue in this paper. It is the specific focus of this evaluation study---and it is to the evaluation of whether of not this occurred that we now turn.

Method

In this paper, we report the results of a quantitative analysis based on survey data collected from students before the intervention began, and at two selected points in time thereafter.

Research Design and Sample

We first collected data in the spring of 1992 when the students were in fifth grade in the six feeder elementary schools that served the district. We collected data from the same students the following spring (1993) when they were in sixth grade in the two middle schools in the district, and again the following spring (1994) when they were in the seventh grade. One of these middle schools served as the "demonstration" school in which the collaborative intervention was taking place. The other middle school served as a "comparison" school and was not involved in any way with changes specific to moving toward a task focus and away from ability focus. Thus, a longitudinal design was employed in which one could approximate a quasi-experimental design.

Students were required to have written permission from their parents in order to participate; 83% of the students received permission. We experienced an attrition rate of 16% over the three years of the study, due in part to the closing of several automobile plants that forced some families to seek new employment opportunities elsewhere. This study includes those students who participated in the study at all three grade levels. In the final sample of 278 students, 57% were male and 43% were female. The sample was 82% European American, 15% African American, and 3% Native American, Indian, or Asian American. Of this total, 21% of the students qualified for free or reduced-fee lunches based on family income. The first wave of data (fifth grade in elementary school) was collected when we were beginning our second year of collaboration with the middle school. The second wave of data (sixth grade) was collected when we were beginning our last year of collaboration, and the third wave of data was collected the year following our collaboration, as teachers and administrators moved ahead with the implementation of changes.

We were able to assess parental level of education during the final year of the study. Students reported that 9.6% of their mothers did not finish high school, 31.8% graduated from high school but did not attend college, 17.0% attended some college, 13.5% were college graduates, and 10.0% attended graduate school (18% of the students did not know their mothers' highest level of education). For reports of fathers, 8.0% did not finish high school, 29.3% graduated from high school, 13.5% attended some college, 12.5% were college graduates, and 8.0% attended graduate school.

Measures

A comprehensive survey (The Patterns of Adaptive Learning Survey - PALS) was administered to students at the end of each of the three years (Midgley, Maehr, & Urdan, 1993). Included in this survey were scales assessing students' perceptions of the goal emphases (task/ability) in their classrooms, their personal achievement goals (task/ability/extrinsic), their feelings of academic efficacy, and their use of deep cognitive processing strategies. We chose to focus initially on perceptions of what was happening in the classroom since it was our sense that most of the school level policies and practices that were targeted for change would be experienced first of all and primarily in the places where instruction occurred. All questions were phrased for both math and for English. Students responded to all items on a 5 point Likert scale, anchored with 1 = not at all true of me, and 5 = very true of me. Table 2 includes the scales, sample items, and alpha coefficients for each of the three years of the study. In the spring of the fifth grade year, we collected information from school records regarding students' scores on the Cognitive Test of Basic Skills (CTBS)[4] in English and mathematics.

[4] Students only took the CTBS in 5th and 6th grades.

In addition to assessing personal task and ability goal orientations, we also included scales designed to assess personal extrinsic goals. Personal extrinsic goals were conceptualized as an orientation to getting right answers and good grades, a purpose that we and others have found to be distinguishable from both task and ability goals (cf. Anderman, 1994; Pintrich & De Groot, 1990). While extrinsic goals may have a lesser position in goal theory per se, they certainly have been of focal interest in motivation research generally (cf. Csikszentmihalyi & Nakamura, 1989) and of specific interest to educators in particular (Cameron & Pierce, 1994; Lepper & Cordova, 1992; Lepper, Keavey, & Drake, in press).

We assessed personal achievement goals somewhat differently than others have done in the past. Some prior studies have assessed students' goal orientation by asking them when they feel successful or really pleased at school. For example, Nicholls and his colleagues used the item, "I feel really pleased when I solve a problem by working hard" in their measure of task goal orientation (Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990). We look more broadly at task goals, including items that assess the goal of understanding, of wanting to learn, and of taking on challenging work. In addition, while some studies have combined items assessing relative ability and extrinsic goals, we have consistently found that with samples of early adolescents, extrinsic goals and relative ability goals form two distinct, orthogonal factors (e.g., Anderman & Johnston, 1994; Midgley et al., 1993; Young & Urdan, 1993). Our measure of ability goals assesses an orientation to demonstrating ability relative to others; whereas our measure of extrinsic goals assesses an orientation toward striving for good grades and right answers.

The present study also includes measures of students' perceptions of the goal structures in their English and mathematics classrooms. Our approach to measuring these goal structures emanates from the work of Carole Ames (e.g., Ames, 1990; 1992). She looks broadly at dimensions of the classroom that represent an emphasis on task and ability goals. Finally, we included measures of academic efficacy and deep processing strategy use in the present study.

The scales assessing students' goal orientation and perceptions of the classroom goal structures used in the present study have been refined and developed over time with different samples of students. These measures have demonstrated construct validity in a number of studies (e.g., Anderman & Young, 1994; Midgley, Arunkumar, & Urdan, in press; Midgley, Anderman, & Hicks, 1995; Roeser, Midgley, & Urdan, in press). Johnston and Anderman recently adapted these scales for use in large scale studies of how adolescents learn about current events. These studies involved over 5000 students in many different states in the United States. The scales proved to be reliable and valid (Johnston, & Brzezinski, & Anderman, 1994). In addition, these scales have been adapted and used in cross cultural research (e.g., Shi, Wang, Sun, & Maehr, 1995; Wang, Shi, Sun, & Maehr, 1995).

For the present study, we used principal components factor analysis with VARIMAX rotation to verify the distinction among the scales. We used the mean value on the items in a factor to form the scales. We ran separate factor analyses for items in mathematics and English (see Table 2).

Research assistants were trained to read the surveys aloud to students in their classrooms and to answer questions. All students were given sample items to make sure that they understood how to respond on the Likert-type scales. Students were also assured that their answers would be kept confidential. Surveys were returned to the research office directly after they were administered.

Results

Pre-Transition Perceptions

We first ran a multivariate MANOVA examining differences in fifth graders responses to the measures before the transition. We used the school that students would attend the following year as the independent variable. Results indicated that before the transition, there were no differences between students who were scheduled to go either to the comparison school or the demonstration school, $F(7) = 2.25$ for English, $F(7) = 1.38$ for mathematics[5]. In addition, univariate F tests indicated no significant differences on any of the English or mathematics measures prior to the transition, based on the middle schools the students were scheduled to attend the following year.

Examining Change Over Time

We used repeated measures MANOVA to examine the effects of subject domain (English verses mathematics), time (changes over the three years), ability level, gender, and type of middle school on the seven dependent variables. To assess the effects of ability level, we assigned students to groups based on their percentile ranks on the CTBS which was taken during the spring of the fifth grade year. We formed a low ability group consisting of students in the bottom third of the sample, and a higher ability group consisting of students in the top two thirds of the sample. The two types of schools were the demonstration and the comparison middle schools. In this paper, we are ma..ily interested in considering change over time, so we report the effects of time on the dependent variables, and in particular, the interaction between time and school. Means and standard deviations on all scales at each time point for the full sample and for each of the two schools are presented in Table 4.

Main Effects of Time

While there were main effects of time for all scales, these are only of incidental interest so far as the effects of the collaborative intervention are concerned. The results regarding the main effect of time supported in most cases research we and others have described regarding the transition from elementary to middle school. That is, when the data from the two schools and the two subject domains were combined, perceptions of the classroom as emphasizing task goals decreased between the fifth and sixth grades, and then remained relatively stable between the sixth and seventh grades. $F(1, 275) = 13.65$, $p<.001$. Perceiving the classroom as emphasizing ability goals increased between fifth and sixth grades, and then decreased somewhat during the seventh grade, $F(1, 275) = 6.43$, $p<.01$. Regarding personal achievement goals, an orientation to task goals decreased over the three years, $F(1, 275) = 39.03$, $p<.001$, whereas an orientation to ability goals increased between grades 5 and 6, but then decreased between grades 6 and 7, $F(1, 275) = 37.53$, $p<.001$. An orientation to extrinsic goals increased over the three years, $F(1, 275) = 8.89$, $p<.001$. The reported use of deep processing strategies decreased over the three years, $F(1, 275) = 25.60$, $p<.001$. Academic efficacy declined substantially between fifth and sixth grades, and then increased during the seventh grade year, $F(1, 275) = 30.94$, $p<.001$.

Interaction of School and Time

While these findings are supportive of other research (e.g., Eccles & Midgley, 1989; Midgley et al., 1995; Simmons & Blyth, 1987), main effects involving time mask differences between schools. Of particular importance in evaluating possible effects of the collaborative intervention are the school x time interaction terms. In this case, it should be noted that several

[5]All F statistics reported in this study are multivariate F's produced by the SPSS-Windows program, except where otherwise noted.

school x time interactions reached acceptable significance levels, suggesting that changes in motivational goals and beliefs were different across the two middle schools. Figure 1 displays the significant interaction of school X time for ability goals, $F(1, 275) = 3.56$, $p<.05$.

Students who attended the demonstration school experienced a small decrease in ability goals across the three years; in contrast, students who attended the comparison school experienced an increase in ability goals during the first year of middle school, followed by a decrease during the seventh grade. The increase from grades 5 to 6 was steeper than the decrease from grades 6 to 7. Thus after the transition, the students who attended the comparison school were more oriented to ability goals than the students in the demonstration school at the end of seventh grade. There was no significant interaction of school X time for task goals.

Figure 2 displays the interaction of school X subject X time for perceptions of an emphasis on task goals in the classroom .For students who moved to the comparison school after the transition, there was almost no change in their perceptions of a task goal structure during English instruction across the three years, whereas for students who moved to the demonstration school, there was a small decrease between grades 5 and 6, and then a somewhat greater decline from grades 6 to 7. Note that at the end of the seventh grade year, classroom task goals in English are considerably lower in the demonstration school than in the comparison school.

For math, there was a decline in perceptions of a task goal structure during math instruction for students who moved to the comparison school at grade 6, and there was a small increase between grades 6 and 7. For students who moved to the demonstration school, there was a small decline in perceptions of a task goal emphasis in math between grades 5 and 6, and then a very small increase between grades 6 and 7.

The interaction of school X time for perceptions of an emphasis on ability goals in the classroom is displayed in Figure 3. There was an increase in perceptions of an emphasis on ability goals in the classroom between grades five and six for students who moved to the comparison school, whereas there was virtually no change for students who moved to the demonstration school. By the end of the seventh grade, students from both schools report similar levels of perceptions of classrooms as being ability-oriented.

Since the school by time interactions for extrinsic goals and academic efficacy were only marginally significant, we ran separate MANOVAs comparing changes over grades 5 to 6, and over grades 6 to 7. Results indicated school by time interactions for extrinsic goals, $F(1, 304) = 5.73$, $p<.05$, and for academic efficacy $F(1, 304) = 4.85$, $p<.05$) between grades 5 and 6. There were no significant school X time interactions between grades 6 and 7. These results for grades 5 and 6 are displayed in Figures 4 and 5. Student endorsement of extrinsic goals showed no appreciable change in the demonstration school over the transition, and increased in the comparison school. While academic efficacy declined over the transition in both schools, the decline was greater in the comparison school than in the demonstration school.

Discussion

Overall, the results indicated that changes over the transition from elementary to middle school, and continued changes between the sixth and seventh grades, were not identical in the two schools, even though there were no differences on any measures prior to the transition for students scheduled to attend either middle school. In particular, the patterns of change between fifth grade in elementary school and sixth grade in middle school were more positive in the demonstration school students than in the comparison school students. Comparison school students increased in their espousal of ability goals and extrinsic goals after the transition to

middle school, whereas demonstration school students exhibited little change. As expected, comparison school students perceived an increased emphasis in their classroom on ability goals after the transition, whereas demonstration school students did not. However, it should be noted that by the end of the seventh grade, students in the two schools did not differ in their perceptions of the emphasis on ability goals in their classrooms. Changes at the seventh grade level were just underway when the last wave of data was collected. It was unfortunately impossible for us to follow these students into the eighth grade to see if differences in perceptions of ability goals might have re-emerged later. In addition, students who were assigned to the small house program in the demonstration school (about half the students) may have experienced more positive change during the seventh grade year than those who remained in the traditional program. Unfortunately, we do not have information about which students were or were not assigned to the small house program.

The interaction between time, school, and subject for perceptions of the classrooms as emphasizing task goals presents a somewhat complicated picture. Here we see that students in the comparison school perceived a decreased emphasis on task goals in the classroom in math, but not in English. Students in the demonstration school also perceived a small decline in the emphasis on task goals in math, but not to the degree experienced by students in the comparison school. Perhaps the most puzzling finding is the drop in the perceptions of a task goal emphasis in English between sixth and seventh grade for students in the demonstration school. These students end the seventh grade year perceiving a diminished emphasis on task goals in English as compared to students in the comparison school.

Regular and intensive classroom observations might have provided a basis for interpreting these findings. For a variety of reasons, however, we were unable to make such observations. Nevertheless, the survey data and our regular interactions with staff and students left us with no real clue as to why English classrooms in the demonstration school appeared to negatively affect students' perceptions of an emphasis on effort, challenge and understanding.

The finding that students in the two schools exhibited a decrease in sense of academic efficacy is, of course, troubling, but not without precedent (cf., Eccles et al., 1983; Thornburg & Jones, 1982). The intervention of course was most immediately directed toward goal change: an enhanced focus on task and a reduced orientation toward ability goals. However, over time, changes in goal structures would be expected to affect students' sense of academic efficacy (cf. Anderman & Maehr, 1994). Of course, the operative phrase might indeed be "over time." That is, the intervention simply may not have been in place for a sufficient period to expect that any changes in the ways students viewed the purposes of schooling, and how these views might have changed rather basic and enduring views of the self. Nevertheless, there is a degree of comfort in the finding that the decline was somewhat greater in the comparison than the demonstration school.

In sum, even though the differences in the changes across time for students in the two schools are not dramatic for all of the motivational variables, the differences in the degree and direction of these changes suggests that the transition to middle school varies considerably during early adolescence . Arguably, these differences contribute to a larger picture in which it appears that different environments were fostered in these two schools---even in this short period of focused intervention.

Schools Do Make a Difference

Reflecting on these interpretations of the findings, we wish to make two points of more general significance. The first point relates to the important role that schools likely play in the maintenance and development of positive motivational patterns---even during the "sturm and drang" of early adolescence.

From time to time, it is argued that it is the family, society, or some factor other than the school that is to blame for lack of learning or investment in school---as well as deportment; and, in the case of adolescents, growth, developmental stage, and physiology are often identified as the culprits (see Eccles et al., 1993, and Eccles & Midgley, 1989, for reviews). Our results, however, are on the side of those who argue that schools are a critical causal variable. And, more specifically and emphatically, we would suggest that the present results contribute to a broader understanding not only that, but how and why, different schools may affect motivational patterns during the middle grades (cf. for example, Eccles, et al., 1993; Simmons & Blyth, 1987). Briefly, although there were no differences in the motivational patterns and beliefs of students before the transition to middle school, their motivational patterns subsequent to the transition were quite different. Generally and simply put, the students in the demonstration school exhibited, overall, more "positive" motivational patterns. That result seems to relate to the quality of environment which the intervention was designed to enhance.

So, schools come in different forms and it is, most probably, the learning culture or climate they present that has much to do with the engagement that will be exhibited. That point is not without interest or value, especially as it is tied in with a larger theory of school culture and the policies in which it is rooted (cf., Maehr, Midgley, & Collaborators, in press). Yet, a second question is of immediate interest: Have we really demonstrated that one can intervene to create a school that enhances motivation, as we proposed?

The Intervention as "Cause"

Was the collaboration really the source of these differences exhibited by students in the two schools? In any type of field research of this nature it is of course extremely difficult to talk of cause and effect in hard and fast terms. This observation that has led some to reject positivist paradigms in general and quantification of variables in particular (e.g., Frey, 1994; Moss, 1996). Indeed, the notion of intervening as we endeavored to do will probably come in for its fair share of criticism from this quarter. That aside, there is some logical basis for believing that the process of intervention was a factor; beyond that, there is a further basis for surmising that new and improved interventions along this line might yield even better results.

Certainly, the outcomes that we reported emerged parallel to theoretically specified changes in school policy and practice, making the intervention a prime candidate for the source of the results reported. It is difficult to attribute the results to that well know "bugaboo" of intervention and innovation: the Hawthorne Effect. Probably not just any intervention would have the same effects. Like any school, this intervention was not the only instance of something new and different happening. Nevertheless, it did represent a rather comprehensive effort to re-think school environments--but in very specific terms which should yield selected outcomes defined within a theoretical system. Certainly, students didn't see themselves as being in "an experiment," nor really did teachers. Moreover, it wasn't the case that the comparison school was unconcerned with school reform. It was---only along different lines. As is common today, reform was mandated by both the state and the district---but the two schools were working at reform in their own and separate ways.

Obviously, however, whatever changes did occur were also a product of an orientation that existed in the staff and leadership of the school before the University group arrived on the scene. Moreover, it is reasonable to assume that even as they were willing to work in this intensive fashion with us, at least some on the staff were inclined toward the basic tenets of goal theory. It is conceivable that the collaborative intervention maybe only encouraged or helped to shape latent predispositions in the teachers and administrators in the demonstration school.

But the central point is much the same: Schools, and the learning environments they present, do make a difference in the goal emphases and the definitions of schooling that emerge

in the minds of their students. The intervention we have described suggests that these school environments are not an ineluctable given. They are something that can be influenced at least, probably significantly shaped, by focused effort.

Implications

The intervention designed and evaluated in this study has several different facets. One that has hardly been alluded to is what we will call the "school design facet." There have been many calls for school reform, often for school transformation (e.g., Fuhrman, 1995; Sarason, 1990). Similarly, commentators regularly note the lack of interaction between researchers and practitioners in designing educational programs for adolescents (e.g., Jones, 1990). Since motivation is a critical issue during the middle grade years (cf., Anderman & Maehr, 1994; Midgley, 1993), the idea of "testing" the utility of a motivational theory to facilitate school reform may serve as a catalyst to future reform efforts that combine theory and research with practice. Can motivation theory speak effectively to this problem?

First, we believe that we have added to the body of information that indicates that motivation theory, especially goal orientation theory, holds clear and important implications for the design of schools as well as instruction. The effort that we have reported represents an attempt to outline a design of school that embodies certain well-founded principles associated with student engagement in learning; in other words, it was a design experiment (cf., Brown, 1992; 1994) and a rather ambitious one at that. In the earlier summary of the evaluation of the collaboration we said nothing about what may be as important a finding as any, however one that is all too easy to ignore: Goal theory could be and in fact was translated effectively into the real world of schooling. This research was not carried out in a "special" school with a "special agenda," or in a few select classrooms within a school. Rather, goal theory was translated into the kinds of policies and practices that likely figure prominently into the culture of the entire school, especially that part of the culture that is most deeply related to how and whether students invest in learning. Goal theory principles could and were effectively employed in framing what could and should be changed in re-framing school. General principles arrived at in basic research on goal orientations (e.g., Ames & Archer, 1988; Dweck & Leggett, 1988; Nicholls, 1989; Nolen, 1988) mapped readily on to school practice and student outcomes. The antecedents of student perceptions of school and the adoption of personal goals could be associated with policy and practice choices commonly made by schools. Consequently, this project has built on the work of others in determining what, more precisely, must be changed if task focused schools (and task focused students) are to be created.

But we can go a step or two beyond that important outcome. Not only were the pressure points for change identified, their changeability under replicable circumstances was found. As the all-too-brief official collaboration period ended, changes had occurred and more were on the horizon. Moreover, the clarity of the theory and relative simplicity of the process suggests that almost any school, even a school with few resources, little special expertise, and just a little will, can act accordingly. The changes needed to effect a task goal emphasis were implemented by leaders and staff engaged in a focused effort to do so. Although "outsiders" (researchers) were involved in the project, in no sense did they create the school that seemed to be emerging from the collaboration. Rather, the "outside experts" served primarily as a reminder to school persons of what their highest ideals for teaching and learning were and perhaps invigorated them in the pursuit of these ideals. Perhaps the university collaborators served as a catalyst for reflection, analysis, and the opportunity for trying something that involved some risk of discomfort---or failure. In any event, the collaboration was clearly not an esoteric creation of the ivory tower. Teachers were never told what to do by the researchers; rather, the researchers continuously

asked the teachers to examine and re-examine whether or not their proposed changes were in line with the tenets of goal theory. It was something that could be apprehended by, and constructed within, a school---perhaps any school so inclined.

Unlike many design experiments, this one also took some note not only of the nature of the design but also the process through which it can be effectively introduced. As a result, information on the design and the process of introducing such a collaboration into a school context was obtained. The results in this regard, while not absolutely definitive, are indeed informative and promising. Specifically, this study helped us to identify ways in which goal stresses are embodied in the actions taken by schools, administrators, and teachers. This facet of the work is described in greater detail elsewhere (Maehr, Midgley & Collaborators, in press), but is at least worth mentioning in this connection. Specifically, goal stresses apparently can be tied to actions and decisions largely under the control of schools. The perceptions that students come to have regarding the purposes of schools, and ultimately the purposes they come to adopt in approaching school tasks, are a construction within the school context, very likely attributable to specifiable actions taken by teachers and administrators. They are a part of the culture of school that probably can be changed.

Conclusion

Reflecting on these results, we believe that it is possible and fruitful to intervene in the way that we have proposed. The potential for making relevant and specific changes in learning environments in line with theory was affirmed. That in and of itself is instructive. But was this attempt actually "successful" in changing the school world of students? First, one can say that this intervention was at least as successful as others of a similar nature (cf. for example, Ames, 1990; de Charms, 1976; 1984; Felner, Brand, Adan, & Mulhall, 1993; Weinstein et al., 1991; Weinstein, Madison & Kuklinsiki, 1995). We say this not to denigrate in any respect the work of others, but simply to point up the difficulty of obtaining solid evidence of a causal nature when one attempts to intervene in this manner. What seems reasonably clear is that certain changes in policy and practice were effected in the demonstration school that were qualitatively different than what occurred in the comparison school. Further, a systematic collaborative effort to follow a theory in making changes in policy and practice was associated with a trajectory in the perceptions of students toward school that was in fact quite different from that exhibited by students in the comparison school.

But embroiling oneself in the real world of schools promises also to pay dividends for theory. We believe that we have shown how theory can inform practice. We are at least as sure that practice in this case informed theory. Certainly the intervention, designed in collaboration with school staff, provided insights that could have been obtained in no other way. In the present case, we are emboldened to draw inference for theory. First, anyone who has read this paper to this point would be surprised if we did not conclude that the findings provide some modicum of validity for goal orientation theory. The measures, the methods, the objectives, the strategies, the focus, all have their source in this very active area of educational research. In so far as this project has experienced a degree of success, goal theory is the heir. Yet, involving ourselves in the real world of school change, we cannot help but ask how theory must be enhanced to further serve the needs of schools. While the age-old problem of putting "theory into practice" provides numerous obstacles for the researcher, it also provides numerous opportunities for the continued improvement of school environments (cf., Hatch, 1993).

School interventions of this or any other nature may change what happens within school walls. They typically cannot change, easily or effectively, what happens elsewhere in the child's world. The school is just one of multiple factors in the student's life (cf., Eccles et al., 1993). It

is fair to say that most of these extra school factors-- family, peers, and the world at large, are stressing ability goals and extrinsic rewards (Kohn, 1992). The school, at best, can be but a 'still small voice' stressing the inherent worth of learning for all. But within the data we report, that still small voice is not without its important results.

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Table 1

Examples of Task-Focused Practices in the Demonstration School

TARGET Area	Issues	Instructional Practices Used at Demonstration School
Task	What is the student asked to do in school?	Team teaching in sixth and in the seventh grade. While team teaching in and of itself is not necessarily a task-focused practice, it served as an *enabling mechanism* to allow teachers to collaborate and change the nature of academic tasks. Some use of interdisciplinary units. Administrators gave priority to programs, activities, inservices, and training to aid teachers in providing meaningful, challenging academic tasks to students.
Authority	What kinds of choices are given? How is student sense of responsibility enhanced?	Faculty discussed and implemented new opportunities for students to make choices about course materials (e.g., what books to read in English). Upon transition into the seventh grade, students could choose whether or not they wanted to be in a "small house" or traditional environment.
Recognition	What outcomes and behaviors are especially attended to? What reward and recognition policies are followed?	The emphasis on recognizing students for effort and improvement increased. Faculty developed "principles of recognition" for the school which emphasized individual growth and development, rather than grades and competition. School "bumper stickers" changed from Proud Parent of a Smith[1] Middle School Honor Student to Proud Parent of a Smith Middle School Student.

[1] "Smith" is an pseudonym used to protect the school's identity.

Grouping	Is ability grouping an implicit or explicit policy? Is learning viewed as an individual and/or social constructive process? Are interdisciplinary and thematic approaches to teaching encouraged?	Ability grouping was eliminated in the sixth grade. Ability grouping was eliminated in the seventh grade in all subjects except mathematics. A "small house" was established at the sixth grade level and a smaller experimental "small house" was established for the seventh graders, where students experienced team-teaching and some interdisciplinary units without ability grouping. Two teachers experimented with self-contained classrooms which emphasized task-focused practices. The small house and self-contained classrooms served as enabling mechanisms.
Evaluation	What do assessment and "grading" procedures imply about school objectives?	The use of portfolios was discussed. Teachers expressed a desire to learn how to use portfolios for assessment.
Time	Is the 40-50 minute instructional period "sacred?" What flexibility is there for accommodating the need for larger blocks of time?	The number of bells between classes was reduced. The schedule was blocked to allow more flexibility as needed by teachers. Common planning time was initiated for small house teachers and sixth grade teachers working in teams.

Note. Issues presented in this table are based on the work of Epstein (1989), Ames (1990), and Maehr, Midgley, & Colleagues (in press).

Table 2

Scales, Items, and Alpha Coefficients

Scale	Items	Math Alpha	English Alpha
Personal Task Goals	I like math work that I'll learn from, even if I make a lot of mistakes. Understanding the work in math is more important to me than the grade I get. The main reason I do my work in math is because I like to learn. I like math work that is really challenging.	.71, .75, .77	.73, .80, .85
Personal Ability Goals	I would feel successful in math if I did better than other students. I would feel really good if I were the only one who could answer the teacher's questions in math. I'd like to show my teacher that I'm smarter than other kids in math.	.65, .71, .75	.77, .82, .80
Personal Extrinsic Goals	The main reason I do my work in math is because we get grades. I don't care whether I understand something or not in math, as long as I get the right answer. I like math work best when it is easy to get right answers.	.59, .79., 67	.57, .77, .71
Deep Processing Strategies	When I make mistakes in math, I try to figure out why. I try to connect new work in math to what I've learned before. When working on a math problem, I try to see how it connects with something in everyday life. I take my time to figure out my work in math. If I can't solve a problem one way, I try to use a different way. I ask myself questions when I work on math to make sure I understand. I spend some time thinking about how to do my math before I start.	.80, .79, .88	.86, .82, .81

Classroom Task Goals	Our teacher tries to find out what students want to learn about in math. Our teacher helps us to see how what we learn in math relates to the real world. Our teacher thinks mistakes are O.K. in math as long as we are learning. Our teacher uses lots of other interesting materials to teach math, not just our textbook. Our teacher makes sure that everyone gets to participate in math class. Our teacher encourages students to find different ways to solve problems in math class.[1]	.67, .75, .	.75, .79, .78
Classroom Ability Goals	Our teacher makes it obvious which students are not doing well in math. Our teacher thinks it's more important to get the right answers in math than to know why they're right.[2] Our teacher gets upset when we make mistakes in math. Our teacher calls on smart students more than other students in math. Our teacher goes on to new topics in math even if we don't understand what we are learning now.	.67, .68, .79	.73, .82, .78
Academic Efficacy	Some of the work we do in math is too hard for me. (R) Even if the work in math is hard, I can learn it. If I have enough time, I can do even the hardest problems in math. No matter how hard I try, there is some math classwork I'll never understand. (R)	.66, .65, .72	.66, .83, .72

Note. R = reversed item; the first alpha in each cell represents the internal consistency of the measure administered during the fifth grade, the second alpha represents the internal consistency for the sixth grade, and the third alpha represents the internal consistency for the seventh grade. [1]Items are worded for math; similar items were used for English, substituting the word "English" for "math.".

[1] For English, this item is worded, "Our teacher encourages students to express their own ideas during English, even if the ideas are different from those of the teacher."

[2] For English, this item is worded, "In English, it's more important to get the right answers than to know why they're right."

Table 3

Repeated Measures MANOVA Examining Changes in Goals, Efficacy, and Strategies over the Transition

Variable	Subject	Time	Ability	School	Gender	School X Time Interactions
Task Goals	0.08	39.08***	2.38	0.92	1.62	School X Subject 5.74*
Ability Goals	14.09***	37.53***	0.02	5.50*	4.01*	School X Time 3.56*
Extrinsic Goals	10.38***	8.89***	0.35	4.21*	7.54**	School X Time 2.87^{t}
Class Task	3.40^{t}	13.65***	3.37^{t}	0.00	1.99	School X Time X Subject 8.94***
Class Ability	1.11	6.43**	11.41***	0.20	8.87**	School X Time 7.27***
Academic Efficacy	5.40*	30.94***	15.18***	0.18	1.01	School X Time 2.57^{t}
Deep Processing Strategies	12.20***	25.60***	12.56***	0.31	1.61	School X Ability X Gender X Time 3.22*

*$p<.05$ **$p<.01$ ***$p<.001$ ^{t} $p<.10$

Table 4

Means and Standard Deviations for Full Sample, Comparison, and Demonstration Students

	5th Grade			6th Grade			7th Grade		
	Full Sample	Comp. Mean	Demo. Mean	Full Sample	Comp. Mean	Demo. Mean	Full Sample	Comp. Mean	Demo. Mean
Math Task Goals	3.54 (0.99)	3.48 (0.99)	3.60 (0.99)	3.28 (0.99)	3.15 (1.08)	3.40 (0.88)	2.87 (1.02)	2.79 (1.06)	2.96 (0.97)
English Task Goals	3.42 (1.00)	3.41 (0.99)	3.42 (1.01)	3.20 (1.07)	3.14 (1.12)	3.24 (1.02)	2.95 (1.05)	2.95 (1.06)	2.94 (1.05)
Math Ability Goals	2.67 (1.11)	2.68 (1.17)	2.67 (1.05)	2.67 (1.07)	2.86 (1.14)	2.50 (0.98)	2.63 (1.05)	2.79 (1.06)	2.48 (1.02)
English Ability Goals	2.41 (1.07)	2.46 (1.11)	2.35 (1.19)	2.53 (1.19)	2.80 (1.20)	2.28 (1.12)	2.36 (1.07)	2.58 (1.13)	2.15 (0.96)
Math Extrinsic Goals	2.52 (1.06)	2.52 (1.06)	2.51 (1.05)	2.53 (1.06)	2.77 (1.11)	2.31 (0.95)	2.81 (1.07)	2.93 (1.08)	2.69 (1.06)
English Extrinsic Goals	2.34 (0.95)	2.42 (1.00)	2.25 (0.90)	2.59 (1.09)	2.77 (1.09)	2.42 (1.07)	2.65 (1.11)	2.84 (1.15)	2.47 (1.05)
Math Classroom Task Goals	3.58 (0.77)	3.64 (0.76)	3.52 (0.80)	3.17 (0.91)	3.04 (0.91)	3.29 (0.89)	3.22 (0.85)	3.11 (0.87)	3.32 (0.82)
English Classroom Task Goals	3.48 (0.85)	3.42 (0.89)	3.54 (0.82)	3.41 (0.92)	3.42 (0.93)	3.40 (0.91)	3.25 (0.91)	3.38 (0.87)	3.13 (0.93)
Math Classroom Ability Goals	2.00 (0.83)	1.88 (0.73)	2.12 (0.90)	2.24 (0.90)	2.33 (0.88)	2.15 (0.91)	2.03 (0.91)	2.09 (0.96)	1.98 (0.85)

English Classroom Ability Goals	1.98 (0.88)	1.92 (0.78)	2.03 (0.96)	2.20 (1.02)	2.30 (0.91)	2.11 (1.10)	2.13 (0.88)	2.07 (0.82)	2.18 (0.93)
Math Academic Efficacy	3.76 (0.89)	3.84 (0.81)	3.69 (0.96)	3.17 (0.60)	3.14 (0.60)	3.21 (0.60)	3.49 (0.97)	3.53 (1.01)	3.45 (0.94)
English Academic Efficacy	3.86 (0.83)	3.93 (0.77)	3.79 (0.89)	3.14 (0.60)	3.09 (0.55)	3.18 (0.64)	3.59 (0.98)	3.60 (0.98)	3.59 (0.99)
Math Deep Processing Strategies	3.32 (0.81)	3.31 (0.82)	3.33 (0.81)	3.16 (0.79)	3.08 (0.83)	3.25 (0.73)	2.92 (0.79)	2.90 (0.79)	2.93 (0.80)
English Deep Processing Strategies	3.19 (0.93)	3.19 (0.92)	3.19 (0.93)	3.01 (0.87)	2.97 (0.91)	3.05 (0.84)	2.86 (0.95)	2.93 (0.95)	2.79 (0.94)

Figure 1. Changes in personal ability goals from fifth to seventh grade.

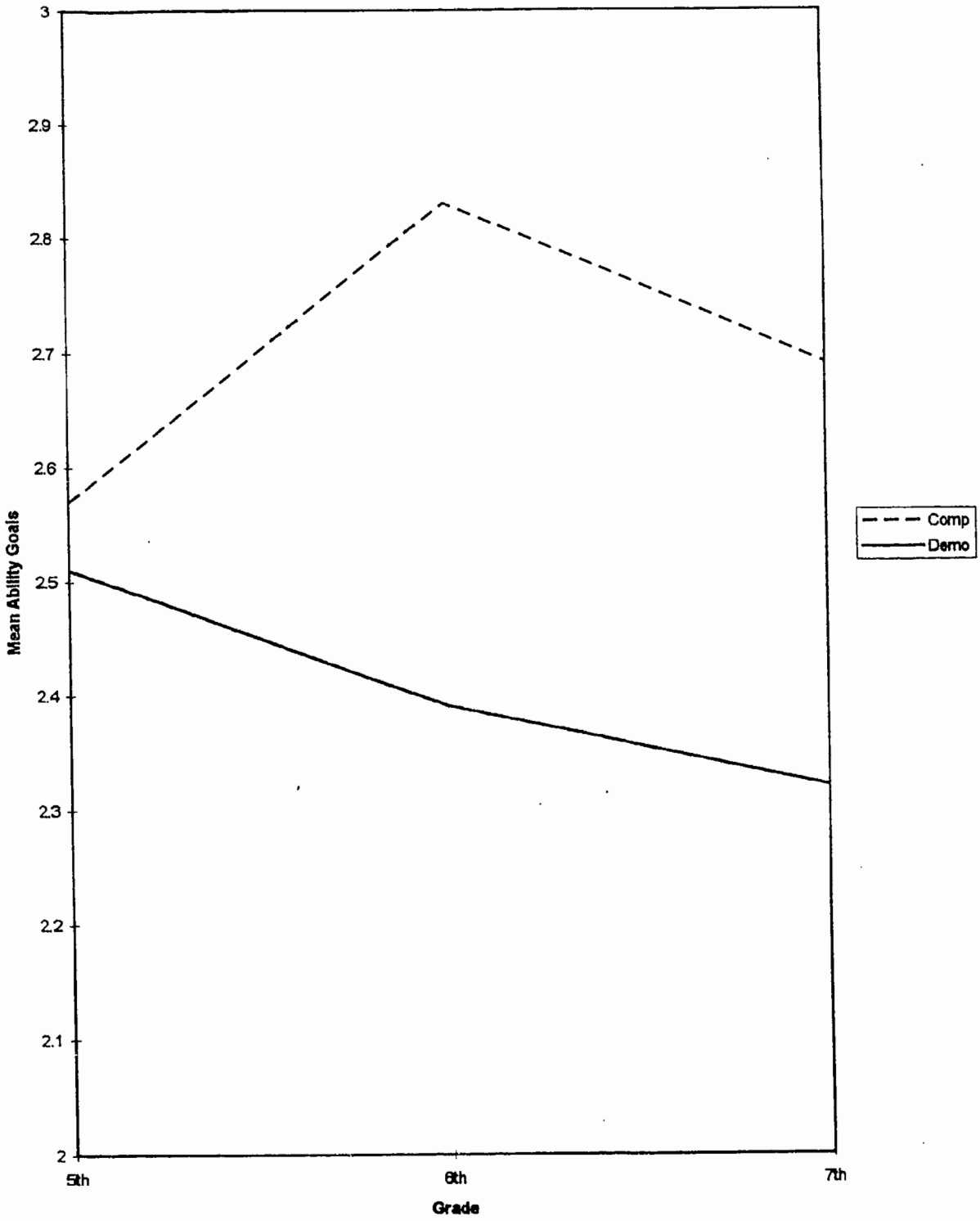

Figure 2. Changes in perceived stress on task goals in math and English classrooms from fifth to seventh grade.

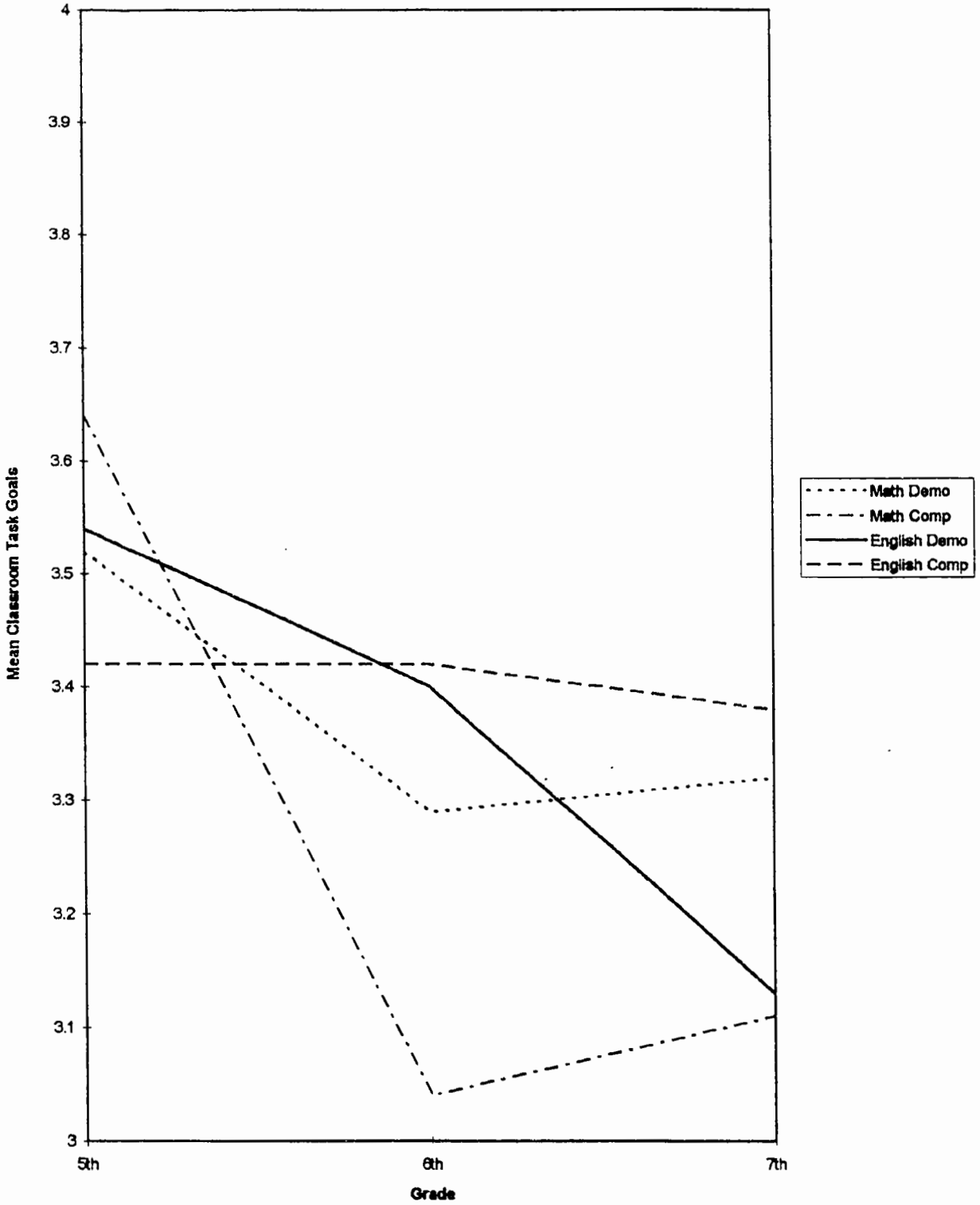

Figure 3. Changes in perceived stress on ability goals in classrooms from fifth to seventh grade.

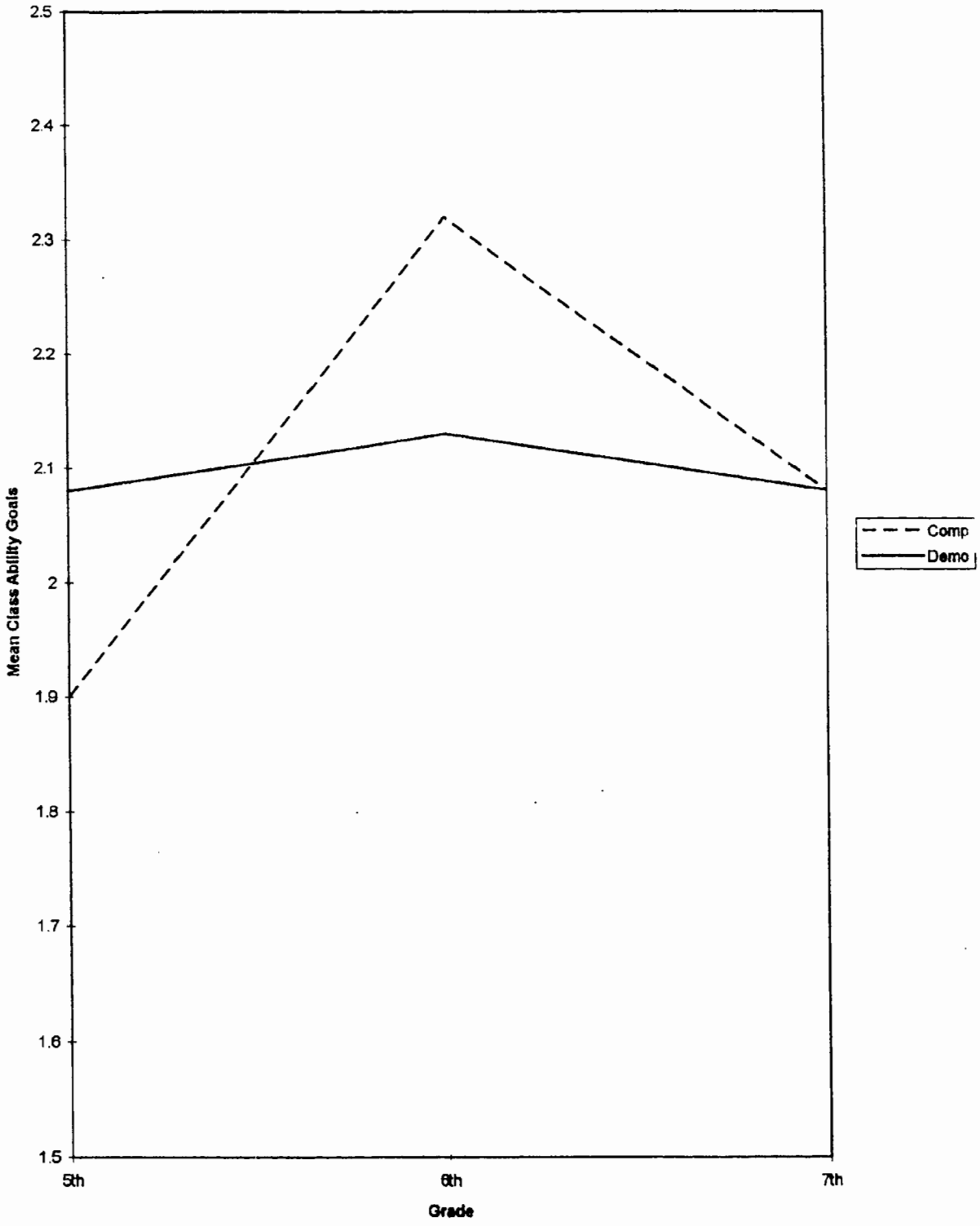

Figure 4. Changes in personal extrinsic goals from fifth grade to sixth grade.

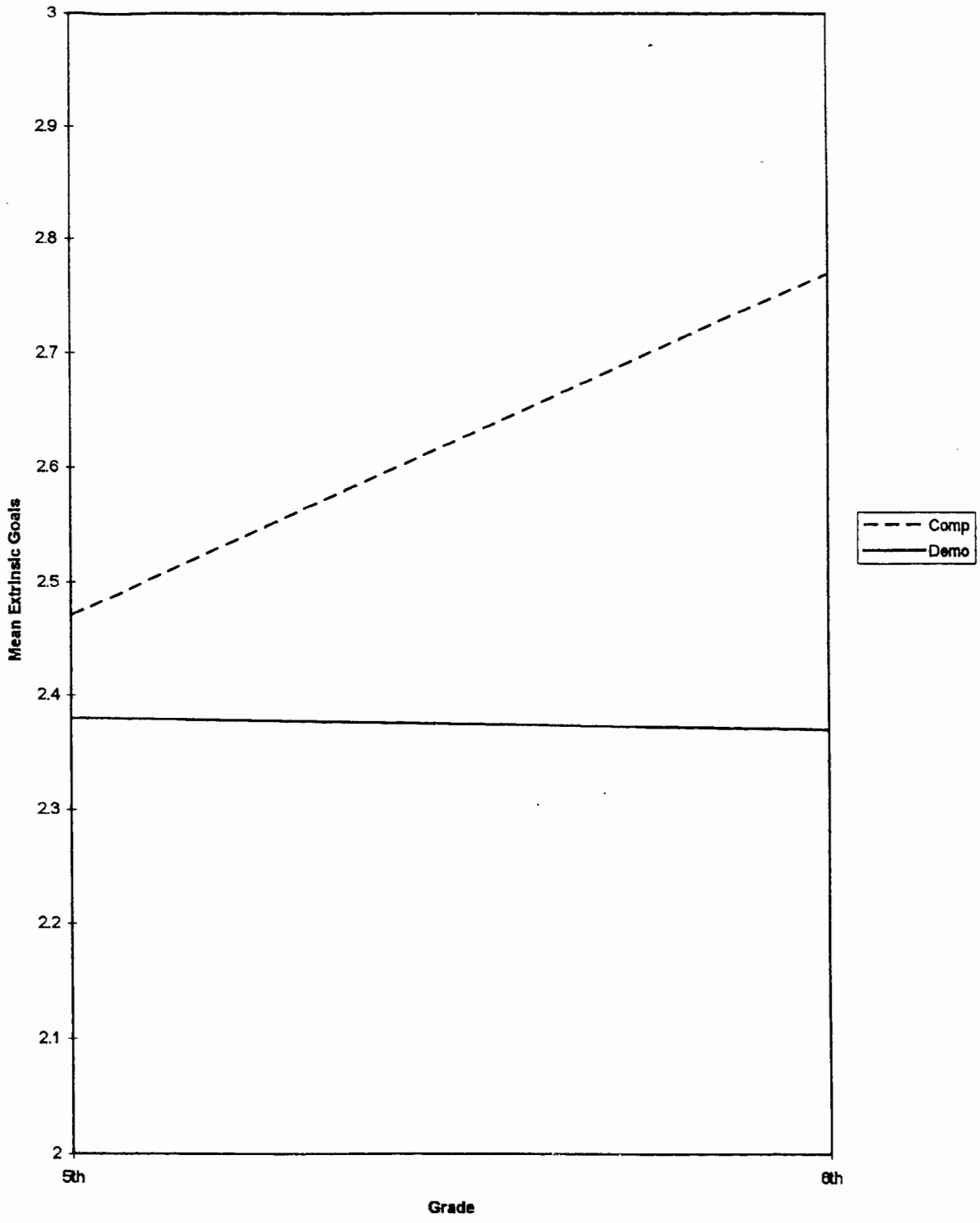

Figure 5. Changes in academic efficacy from fifth to sixth grade.