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ABSTRACT

The concept of goals has emerged as a useful and important social-cognitive approach to understanding motivation, achievement, and learning. Recent work reveals that the environment of the classroom affect the types of goals which students adopt: students are likely to adopt ability-focused goals when they see their teachers emphasizing relative ability and competition while students who feel that their teachers value task-mastery, tend to adopt task-focused goals. This study uses hierarchical linear modeling (HLM) to examine the effects of classroom-level practices on students' perceptions of how much their schools value relative ability and competition over task-mastery. The sample included 341 third through fifth grade students from 15 classrooms in 2 elementary schools. Results indicate that classroom-level practices heavily influence students' perceptions of what their schools value. When teachers foster a competitive classroom environment, then students are likely to feel that the entire school holds such values. On the other hand, when children feel that the school is task-focused, students are less likely to believe that the school values ability goals; however, this negative relationship disappears in classrooms where teachers encourage challenging tasks. This finding suggests that some children merely interpret "challenges" as another form of competition. (RJM)

CLASSROOM PRACTICES AND PERCEPTIONS OF SCHOOL CULTURE: AN HLM MODEL

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ABSTRACT

We use hierarchical linear modeling (HLM) to examine the effects of classroom-level practices on students' beliefs about the extent to which their schools value relative ability and competition over task-mastery. Analyses reveal a number of student-level factors which are related to such beliefs. In addition, HLM shows that teachers who use instructional practices that emphasize competition and relative ability are more likely to have students who believe that the school as a whole values ability. Students who interpret academic challenges as a form of competition seem more likely to believe that their school values performance and ability. Implications for classrooms are discussed.

Introduction

The concept of goals has emerged as a useful and important social-cognitive approach to understanding motivation, achievement, and learning. Such "goals" have been labeled in various ways, but here they will be referred to as "task-focused" and "ability-focused" (Nicholls, 1989; Ames, 1990; Dweck & Leggett. 1988). A student who adopts a task-focused goal orientation is primarily concerned with understanding, task-mastery, and learning for its own sake; in contrast, ability-focused students are mainly concerned with how their ability compares with others.

The goals which students adopt are related to many important psychological outcomes. For example, students who pursue *task goals* tend to use deep cognitive processing strategies[1], to continue to be interested in a task after formal instruction is completed, and to be more creative; those who pursue *ability goals* tend to use surface level processing strategies, to be less invested in tasks after instruction, and to be less creative (Nolen, 1988; Maehr, 1976; Archer, 1990).

Recent work has demonstrated that the environment of the classroom affects the types of goals which students adopt (Ames & Archer, 1988). When students perceive that their teachers emphasize relative ability and competition, then they are likely to adopt ability-focused goals; but, when students feel that their teachers or classrooms value task-mastery, then they are likely to adopt task-focused goals. Others have posited the same relationship for perceptions of the school as a whole (Maehr, 1991).

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[1]Deep cognitive strategies include self-regulated monitoring of comprehension and an attempt to understand abstract conceptual relationships; surface strategies include rote memorization and rehearsal (see Nolen, 1988).

The present study examines the effects of individual and classroom-level factors on students' perceptions of the ability focus in the school as a whole. We utilize a multilevel analysis technique called *hierarchical linear modeling* **(HLM)** to capture the multilevel nature of our data. HLM is generally more precise than standard ordinary least squares (OLS) regression in detecting and analyzing multilevel effects (Bryk, Raudenbush, Seltzer & Congdon, 1989).

Method

Subjects

The sample includes 341 third through fifth grade students from 15 classrooms in two elementary schools. The district is predominantly white; 11% of the students are African-American. Ninety percent of the children had permission to participate.

Measures

The students responded to a self-report questionnaire consisting of 108 items assessing student motivation, cognitive strategy use, and perceptions of classrooms and schools. Questionnaires were administered in May 1991. Scales were developed based on results of factor analyses.[2] Teachers completed a survey assessing their classroom practices and beliefs. All items were on a five point Likert scale.

Results

Student level predictors were chosen based on a review of relevant literature regarding variables which are related to students' adoption of an *ability*

[2]Alpha levels for all scales exceed 0.60.

focused goal orientation.[3] The following variables were chosen: a tendency to reflect on the *rationale* or reasons students do their school work (Maehr & Anderman, in press); a belief in the *fixed* nature of intelligence (Nicholls, 1989); a valuing of competition and relative ability (Elliott & Dweck, 1988); and a belief that the school is task-focused (Maehr, 1991).

Ordinary Least Squares Approach

Table 1 presents the correlations among these items (after standardization), and Table 2 presents the results of an exploratory OLS regression. All of the predictors are positively related to the outcome, except for a belief that the school is task-focused, which is negatively related to a belief that the school is ability-focused. These results mirror previous findings. Therefore, we proceeded with an HLM analysis to examine the effects of *classroom-level variables* on students' perceptions of the school culture.

[3]We did not examine perceptions of a school-wide task focus as our outcome, since only 6.0% of the variation occurs between classrooms.

Table 1: Correlation Matrix Using Standardized Scores

	Rationale For Work	*Individual Ability*	*Fixed Intelligence*	*School Learning*	*School Ability*
Rationale For Work	1.00				
Individual Ability Focus	.147***	1.00			
Fixed Intelligence	.245***	.250***	1.00		
School Task Focus	.300***	-.055	.053	1.00	
School Ability Focus	.229***	.479***	.301***	1.00	1.00

*p<.05 **p<.01 ***p<.001

Table 2: Betas for Regressions Predicting a School-wide Focus on Ability

PREDICTOR	***BETA***
Individual Ability Focus	.396***
School Focus on Task-Mastery	-.196***
Fixed Intelligence	.166***
Rationale for Work	.189***

*R-squared=.31****

An Application of HLM to the Problem

All items and scales were standardized using z-scores. A one way ANOVA with random effects was run using the HLM program (Bryk et al., 1989). The intra-class correlation is .09 (chi square=41.15, p<.000), which means that 9% of the variance in students' beliefs that the school as a whole values ability goals occurs *between* classrooms.

Table 3 presents the level-one HLM model, which examines the effects of *student-level predictors* on the outcome. The residual parameter variance for all predictors except "task focus" has been set to zero, since these factors do not vary across classrooms.

Table 3: Significance of Effects on Perceptions of a School-Wide Ability Focus using HLM

GAMMA	STANDARD ERROR	T	P
For Base Coefficient			
Base -0.021	0.086	-0.25	0.378
For Fixed Intelligence Slope			
Base* 0.181	0.048	3.76	0.003
For School-Wide Task-Focus			
Base -0.155	0.069	-2.24	0.040
For Rationale for Doing Work			
Base* 0.181	0.050	3.59	0.004
For Individual Ability Focus			
Base* 0.351	0.048	7.30	0.000

**=fixed (residual parameter variance=0)*

The full student-level HLM model is presented below.[4]

[4]Reliability estimates for the level one model are 0.72 (base) and 0.44 (slope); for the level two model, 0.67 (base) and 0.41 (slope).

$$SCHOOL\text{-}WIDE\ ABILITY\ FOCUS =$$
$$B0J + B1J(FIXED\ ABILITY) - B2J(SCHOOL\ TASK\ FOCUS)$$
$$+ B3J(RATIONALE\ FOR\ WORK) + B4J(INDIVIDUAL\ ABILITY\ FOCUS) + RJ$$

Since the belief in an ability-focus (chi square=61.87, p<.001) and the task -focus slope (chi square=50.12, p<.001) still vary across classrooms, we proceeded with a level-two HLM model to examine the effects of classroom-level variables on our student-level outcome. Table 4 presents the results of this analysis.[5]

Table 4: Full HLM Model for School-Wide Ability Focus

	GAMMA	STANDARD ERROR	T	P
For Base Coefficient				
Base	-0.044	0.080	-0.544	0.331
Teacher stresses ability-focus	0.175	0.075	2.340	0.035
For Fixed Intelligence				
*Slope Base	0.173	0.048	3.602	0.004
For School Task-Focus				
Slope Base	-0.143	0.067	-2.144	0.048
Teacher encourages challenging tasks	0.164	0.069	2.366	0.034
For Rationale for Doing Work				
*Slope Base	0.185	0.050	3.720	0.004
For Individual Ability Focus				
*Slope Base	0.349	0.048	7.301	0.000

*=fixed (residual parameter variance=0)

[5]In HLM, one essentially measures the effects of contextual variables on slopes and intercepts as outcomes. The same basic constraints that apply to OLS apply here; consequently, since we only have data for 15 classrooms, we are limited to a single predictor for each slope or intercept that varies between classrooms.

All of the level one main effects remain significant.

The level-two HLM model is presented below:

$$\beta_{0j} \text{ (intercept)} = \gamma_{00} + \gamma_{01}(\text{Uses ability-focused practices}) + u_{0j}$$

$$\beta_{1j} \text{ (task focus slope)} = \gamma_{10} - \gamma_{01}(\text{Encourages challenging tasks}) + u_{ij}$$

A scale developed from our teacher instrument measures the extent to which teachers use ability-focused instructional practices within their classrooms.[6] The significant gamma (γ=0.175, p<.05) indicates that in classrooms where teachers use ability-focused instructional practices, students tend to view *the school as a whole* as more ability-focused than in other classrooms.

Another measure assesses how much the teacher encourages students to engage in challenging academic tasks. This measure is a significant predictor of the relationship between the task-focus slope and the outcome (γ=0.164, p<.05). Since the gamma for the *slope* is negative (γ=-0.143, p<.05) while the gamma for the *classroom-level predictor* is positive, we have evidence that in classrooms where teachers encourage challenges, there is *less* of a negative or "opposing" relationship between feeling that the school stresses task mastery verses ability. Our analysis explained 26.14% of the between-classroom variation in the outcome.

[6]Examples of such practices are competition for grades, displaying the work of the brightest students, and telling parents how their children compare with other children.

Discussion

The present study demonstrates that at the elementary school level, classroom-level practices have a strong impact on students' perceptions of what their schools value. When teachers foster a competitive classroom environment that stresses grades and performance, then students are likely to feel that the entire school holds such values. This is important, since perceptions of the school influence student motivation (Maehr, 1991; Maehr & Fyans, 1989; Maehr, Midgley & Urdan, in press). Our findings also show that when students feel that the school is task-focused, students are *less* likely to feel that the school values ability goals; however, this negative relationship disappears in classrooms where teachers encourage challenging tasks. This finding suggests that "challenges" are merely interpreted as another form of competition to some children. While educators would love for children to accept challenges as exciting and novel situations, many students apparently feel that challenges are just another way of emphasizing the differences between the "most" and the "least" able students.

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