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ABSTRACT

This paper presents findings of a study that examined young adolescents' motivational processes and use of strategies with expository text. Specifically, the study sought to determine how their attributes, self-efficacy, intrinsic value, anxiety, and goal orientation related to their use of cognitive and self-regulating strategies needed to understand expository text. Data were collected through classroom achievement scores, teacher interviews, and a survey of 226 eighth-grade students enrolled in all of the social-studies classes in a school system in northeastern Georgia. LISREL analysis was conducted of two structural models of the relationships among the different motivation, strategy-use, and achievement variables. Findings support a cognitive theory of learning that includes motivation as an important mediator of students' use of strategies. Performance and mastery orientation was a significant predictor of students' cognitive-strategy use; intrinsic value, but not self-efficacy, predicted strategy use; self-efficacy, but not intrinsic value, predicted classroom achievement; and self-regulating strategies seemed to act as a mediating variable between cognitive-strategy use and classroom achievement. Two figures and two tables are included. Appendices contain the survey instruments. (Contains 46 references.) (LMI)

Middle Grade Students' Motivational Processes and Use of Strategies with Expository Text

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Recent reports, including that of the Task Force on Education of Young Adolescents of the Carnegie Council on Adolescent Development (1989), have pointed to the importance of middle grade students learning to learn in preparation for high school and adulthood. For several years reading and strategy researchers have linked this concept of learning to learn to the strategies students need to use to understand expository text. According to Brown, Bransford, Ferrara, and Campione (1983), as students move into high school they need a repertoire of strategies to cope with the "richer semantic domains" in content texts; they need to be able to use a variety of cognitive strategies for processing text, as well as, regulating strategies to manage their effort and monitor their comprehension of the text. Many students seem to develop these strategies between grades 6 and 12 either through cognitive development or strategy instruction.

The development and knowledge of strategies by early adolescent students does not, however, ensure their use of strategies (Brown et al., 1983; Garner, 1990; Paris, Lipson, & Wixson, 1983). Motivation seems particularly important for determining an individual student's use of strategies (Brown et al., 1983; Paris et al., 1983; Paris, Wasik, & Turner, 1991; Pressley, Goodchild, Fleet, Zajchowski, & Evans, 1989).

Several researchers and educators have empirically and theoretically linked various motivational variables to strategy use. Specifically, these included attribution (Borkowski, Weyhing, & Carr, 1988; Carr & Borkowski, 1989; McCombs, 1988; Palmer & Goetz, 1988; Short & Ryan, 1984), goal orientation (Ames, 1984; Ames & Ames, 1984; Ames & Archer, 1988; Borkowski, Day, Saenz, Dietmeyer, Estrada, & Groteluschen, 1991; Dweck, 1986; Meece, Blumenfeld, & Hoyle, 1988; Nolen, 1988), intrinsic value (McCombs, 1988; Paris et al., 1983; Paris & Winograd, 1990; Pintrich & DeGroot, 1990; Pokay & Blumenfeld, 1990), self-efficacy (Bandura, 1977; Bouffard-Bouchard, Parent, & Larivée, 1991; McCombs, 1988; Palmer & Goetz, 1988; Pintrich & DeGroot, 1990; Pokay & Blumenfeld, 1990; Schunk, 1985; Schunk & Rice, 1987), and test anxiety (Culler & Holahan, 1980; Tobias, 1985; Pintrich & DeGroot, 1990; Zatz & Chassin,1983).

Much of the initial research on motivation and strategy use involved a specific motivational process and strategy training with students with special needs (Borkowski et al., 1988; Carr & Borkowski, 1989; Short & Ryan, 1984); other early research investigated the relationship between a particular motivational process and strategy use (Ames, 1984; Culler & Holahan, 1980). More recently, however, researchers recognized that different motivational processes (e.g., intrinsic value and self-efficacy) may work together to influence students' strategy use and achievement (Pintrich & DeGroot, 1990; Pokay & Blumenfeld, 1990). These studies confirmed that they do. These studies also showed

that various motivational processes relate differently to the use of different types of strategies (e.g., cognitive and self-regulating).

Researchers have failed, however to consider specifically young adolescent students' use of cognitive and self-regulating strategies with expository text within a classroom context. It is not clear that motivational processes relate to strategy use with expository text in the same way that they relate to strategy use across content areas (Pintrich & DeGroot, 1990) or strategy use in mathematics (Pokay & Blumenfeld, 1990). Because it is also not clear that motivational processes relate to strategy use in the same way for children of different ages (Blumenfeld, Pintrich, Meece, & Wessels, 1982; Paris & Oka, 1986; Schneider, Körkel, & Weinert, 1987; Wigfield & Eccles, 1989), it is important to examine strategy use among young adolescents.

Thus, this research project was designed to examine how young adolescents' attributions, self-efficacy, intrinsic value, anxiety, and goal orientation may relate to their use of cognitive and self-regulating strategies needed with expository text. It was also designed to examine how those same variables may relate to students' classroom achievement. To explore the relationships among the different variables, two structural equation models of young adolescents' strategy use were specified and evaluated through the use of the Linear Structural Relations (LISREL) approach (Jöreskog & Sörbom, 1986).

For this study we adopted the perspective that the motivation to learn varies from student to student; it is based on students' conscious beliefs and values (Stipek, 1988); and it may change as students interpret different classroom experiences. At the same time we chose to focus on students' general, rather than task specific, motivation and strategy use as they learn from expository text, specifically social studies text.

METHOD

Subjects

Complete data sets were collected from 226 8th grade students (118 male, 108 female; 210 white, 15 Black, 1 Oriental; mean age of 13 years 8 months; CogAT test scores from 2 to 99) enrolled in all of the social studies classes of a single school system in northeast Georgia. For the 1991-92 school year, the eighth grade students were randomly assigned to three teams of teachers, but received their social studies instruction from six different teachers in 14 different classes. The teachers varied in their years of teaching experience. One teacher had completed one year of teaching; each of the other five had more than five years of experience though two were teaching social studies for the first time.

Teachers were interviewed individually to gather background information on students' strategy-related experiences in their social studies classrooms. In general, self-regulating strategy use was encouraged indirectly by some teachers' notebook checks and tests; some cognitive strategies were taught in class.

Instruments

Data on student motivation (i.e., attributions of success and failure, self-efficacy, intrinsic value, anxiety, and goal orientation) and strategy use (i.e., cognitive strategies and self-regulating strategies) were collected using two paper-and-pencil instruments tested in a pilot study. Questions to measure the different constructs were adapted from the research of others as follows (see Appendices A-D):

1. Attribution Scale--two questions adapted from Stevenson, Lee, Chen, Stigler, Hsu, and Kitamura (1990) to measure students' attributions of the cause of their successes and failures in social studies.
2. Motivational Beliefs--23 items on motivational beliefs about self-efficacy, value, and anxiety adapted from Ames and Archer (1988), Pintrich and DeGroot (1990), Simpson and Troost (1982), and Tittle and Hecht (1990). The Self-Efficacy scale consisted of eight items related to perceived competence and confidence in performance of class work (e.g., "I expect to do very well in this class."). The Intrinsic Value scale included 10 items concerning students' interest in the subject and their perceptions about the importance of the subject (e.g., "I like what I am learning in this class."). The five-item Anxiety Scale contained items about students' worry in a social studies context

(e.g., "I get so nervous my mind goes blank when I am doing social studies.").

3. Achievement Goal Orientation--16 items assessing the students' learning goals in social studies. These questions were adapted from a larger scale (Ames & Archer, 1988) that reflected students' perception of the goal orientation of the classroom. Sixteen items were chosen that related to the goal orientation of the individual student. The Mastery scale consisted of eight items (e.g., "Making mistakes is a part of learning."); the Performance scale consisted of eight items (e.g., "I work hard to get a good grade.").
4. Learning Strategies--22 items on cognitive and self-regulating strategies adapted from Pintrich and DeGroot (1990). The Cognitive Strategy scale consisted of 13 items related to students' use of rehearsal strategies (e.g., "When I study for a test I try to remember as many facts as I can."), elaboration strategies (e.g., "When I study I put important ideas into my own words."), and organization strategies (e.g., "I outline the chapters in my book to help me study."). The Self-Regulation Strategy scale contained nine items on metacognitive strategies (e.g., "I ask myself questions to make sure I know the material I have been studying.") and effort management strategies (e.g., "I

work hard to get a good grade even when I don't like a class.").

Students responded to the attribution questions on a five point scale from Not an Important Reason to A Very Important Reason. They responded to all other questions on a five point likert scale with 1 = Not at all true of me and 5 = Very true of me

After the data were collected, the different motivation and strategy use scales were tested for internal consistency; items that correlated poorly with the total were eliminated. The adjusted scales yielded the following Cronbach Coefficient Alphas: Cognitive Strategies (10 items, α = .83), Self-Regulating Strategies (8 items, α = .72), Self-Efficacy (8 items, α = .87), Intrinsic Value (9 items, α = .83), Anxiety (5 items, α = .65), Mastery Orientation (8 items, α = .79), and Performance Orientation (6 items, α = .73).

Classroom achievement data -- a six-weeks social studies average for both of the first 2 six-week periods in the 1991-1992 school year and standardized ability data -- students' most recent Standard Age Score on the Verbal Battery of the CogAT were collected from existing records.

Data collection occurred during the 1991-1992 school year; all data used in the present study were collected during the fall of 1991. Using a script to ensure a similar presentation and the same procedure in each class and with each student, the first author administered all instruments; teachers were not present at any time while students were answering questionnaires. The

different motivation and strategy-use questionnaires were administered during a social studies class to all students over a 4-day period. In each class, students were asked to participate voluntarily. All directions were read aloud and explained; the questions were not read aloud. The procedure took between 30 and 45 minutes in each class. The standardized ability and classroom achievement data were collected after all other data were collected.

The initial stage of data analysis involved an examination of the frequency distribution of students' scores and the computation of descriptive statistics (see Table 1 and Table 2). SAS was used to conduct these analyses. The investigation of the frequency distribution of students' scores revealed a nonnormal distribution for the attribution and anxiety scores of the students with complete data sets. Because nonnormal distribution violates one of the assumptions of the structural equation modeling approach to data analysis, the anxiety and attribution variables were not included in the structural models that were tested. As you look first at the means and standard deviations for the different variables that the students reported using more cognitive than self-regulating strategies with their social studies text as you might expect from the teacher interviews. In the results of the correlational analysis, we would like to focus your attention on the cognitive and self-regulating strategy scores. You can see that students' use of cognitive as well as

Table 1

Means and Standard Deviations for Ability, Motivation, Strategy Use and Achievement Variables

Variable	M	SD	Minimum	Maximum
Success/Ability	3.02	1.18	1.00	5.00
Success/Effort	3.70	1.31	1.00	5.00
Success/Task	3.18	1.22	1.00	5.00
Success/Luck	2.27	1.30	1.00	5.00
Success/Strategy	3.29	1.37	1.00	5.00
Success/Other	2.85	1.39	1.00	5.00
Failure/Ability	2.04	1.19	1.00	5.00
Failure/Effort	3.91	1.15	1.00	5.00
Failure/Task	3.68	1.11	1.00	5.00
Failure/Luck	1.95	1.11	1.00	5.00
Failure/Strategy	3.41	1.33	1.00	5.00
Failure/Other	2.10	1.21	1.00	5.00
Self-Efficacy	3.46	0.79	1.13	5.00
Intrinsic Value	3.24	0.77	1.11	4.89
Mastery Orientation	3.33	0.69	1.38	4.63
Performance Orientation	3.76	0.76	1.50	5.00
Anxiety	2.73	0.83	1.00	4.80
Cognitive Strategies	3.44	0.74	1.20	5.00
Self-Regulating Strategies	3.17	0.66	1.00	4.75
Classroom Achievement	83.63	10.98	47.00	100.50
1992 Iowa Test of Basic Basic Skills Reading National Percentile	66.15	25.69	4.00	99.00
Cognitive Abilities Test Verbal Age Score	61.00	29.03	2.00	99.00

N = 226

Table 2

Zero-Order Correlations for Ability, Motivation, Strategy Use, and Achievement Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 Success/Ability	1.00																					
2. Success/Effort	.04	1.00																				
3. Success/Task	-.04	-.16	1.00																			
4. Success/Luck	-.12	-.43**	.18*	1.00																		
5. Success/Strategy	.06	.51**	-.17*	-.31**	1.00																	
6. Success/Other	.04	.28**	-.01	-.08	.34**	1.00																
7. Failure/Ability	.00	.00	.06	.22*	.00	-.00	1.00															
8. Failure/Effort	-.10	.29**	.12	-.11	.02	.06	.07	1.00														
9. Failure/Task	.05	-.08	.28**	.15	-.08	.02	.00	.12	1.00													
10. Failure/Luck	-.08	-.40**	.15	.57**	-.23**	-.06	.29**	-.15	.05	1.00												
11. Failure/Strategy	-.08	.30**	-.05	.00	.27**	.23**	.01	.41**	.01	-.08	1.00											
12. Failure/Other	-.04	.12	.02	.07	.09	.37**	.07	.08	-.00	.07	.29**	1.00										
13. Self-Efficacy	.38**	.30**	-.10	-.44**	.33**	.03	-.20*	-.02	-.01	-.37**	.02	-.10	1.00									
14. Intrinsic Value	.21*	.39**	-.17	-.41**	.49**	.19*	-.18*	.10	-.06	-.37**	.21*	-.01	.64**	1.00								
15. Mastery Orientation	.26**	.39**	-.17*	-.38**	.43**	.18*	-.20*	.11	.01	-.33**	.16	-.03	.67**	.83**	1.00							
16. Performance Orientation	.27**	.16	-.02	-.25**	14	-.02	.01	.16	.07	-.16	.05	-.04	.38**	.39**	49**	1.00						
17. Anxiety	-.21*	-.05	.04	.20*	-.14	.01	.12	.03	.08	.19*	.02	.12	-.44**	-.22**	-.19*	.06	1.00					
18. Cognitive Strategies	.17	37**	-.15	-.33**	.45**	.18*	-.10	.11	-.01	-.28**	.26**	.04	.53**	.67**	.67**	.44**	-.08	1.00				
19. Self-Regulating Strategies	.15	.46**	-.22**	-.35**	.45**	.15	-.10	.09	-.07	-.30**	.23**	.03	.54**	.66**	.63**	.36**	-.09	.67**	1.00			
20. Classroom Achievement	.17	.23**	-.04	-.40**	.22**	.05	-.24**	.15	.04	-.30**	.04	-.03	.52**	.41**	.45**	.30**	-.27**	.35**	.38**	1.00		
21. 1992 Iowa Test of Basic Skills Reading National Percentile	.14	.01	.05	-.19*	.01	-.07	-.24**	.21*	.09	-.16	-.02	-.06	.27**	.20*	.22**	.27**	-.26**	.24**	.11	.60**	1.00	
22. Cognitive Abilities Test Verbal Age Score	.12	.00	.00	-.16	.02	-.07	-.22**	.20*	.09	-.10	-.02	-.09	.19*	.15	.21*	.25**	-.21*	.21*	.05	.45**	.83**	1

N = 226
*p < .01
**p < .001

self-regulating strategies was positively and significantly correlated with higher levels of self-efficacy, intrinsic value, and mastery and performance goal orientation.

It is important to note that other researchers have not found a significant relationship between scores on measures of student mastery and performance orientation; however, this study did. As there is no theoretical evidence that either of these should predict the other, we concluded that this relationship could be a reflection of the instruments. The wording of the questions used to measure the two constructs were similar. To handle the situation, we freed the path between the residuals of mastery and performance orientation in each of the models we tested.

Two structural models of the relationships among the different motivation, strategy use, and achievement variables were evaluated through the use of the LISREL approach (Jöreskog & Sörbom, 1986) to statistical analysis. The analyses were based a matrix of correlations among the variables. By definition a structural equation model specifies particular relationships among a set of variables. A model includes both predictor and predicted variables and in a complex model variables may function as predictor and predicted variables at the same time. Solid lines with an arrow on one end are used to indicate the hypothesized direction of influence between two variables.

LISREL provides the researcher different indicators of the appropriateness of a specified model. The chi-square goodness of

fit test assesses the overall goodness-of-fit for each model. The chi-square test computed by LISREL tests the null hypothesis (that the observed covariance matrix S is generated by the hypothesized model), that the hypothesized model fits the data. Failure to reject chi-square H_0 ($p > .05$) indicates that the hypothesized model does fit the data; rejecting chi-square H_0 ($p < .05$) indicates that the hypothesized model does not fit the data. LISREL analysis also estimates path coefficients that indicate the relationships between pairs of variables in the model. Conceptually these path coefficients are similar to the beta weights reported in regression analyses. A particular path coefficient provides in indication of the direct effect one variable has on another variable in the model while all other variables remain constant.

In each model of young adolescents' strategy-use with expository text (i.e., Model One and Model Two), we hypothesized that: (a) student ability would predict classroom achievement directly and indirectly through mastery and performance orientation; (b) students' mastery and performance orientation would impact on strategy use directly and indirectly through self-efficacy and intrinsic value and would impact on students' classroom achievement independent of their impact on students' strategy use; (c) self-efficacy would predict students' cognitive and self-regulating strategy use directly and indirectly through their intrinsic value and would predict classroom achievement

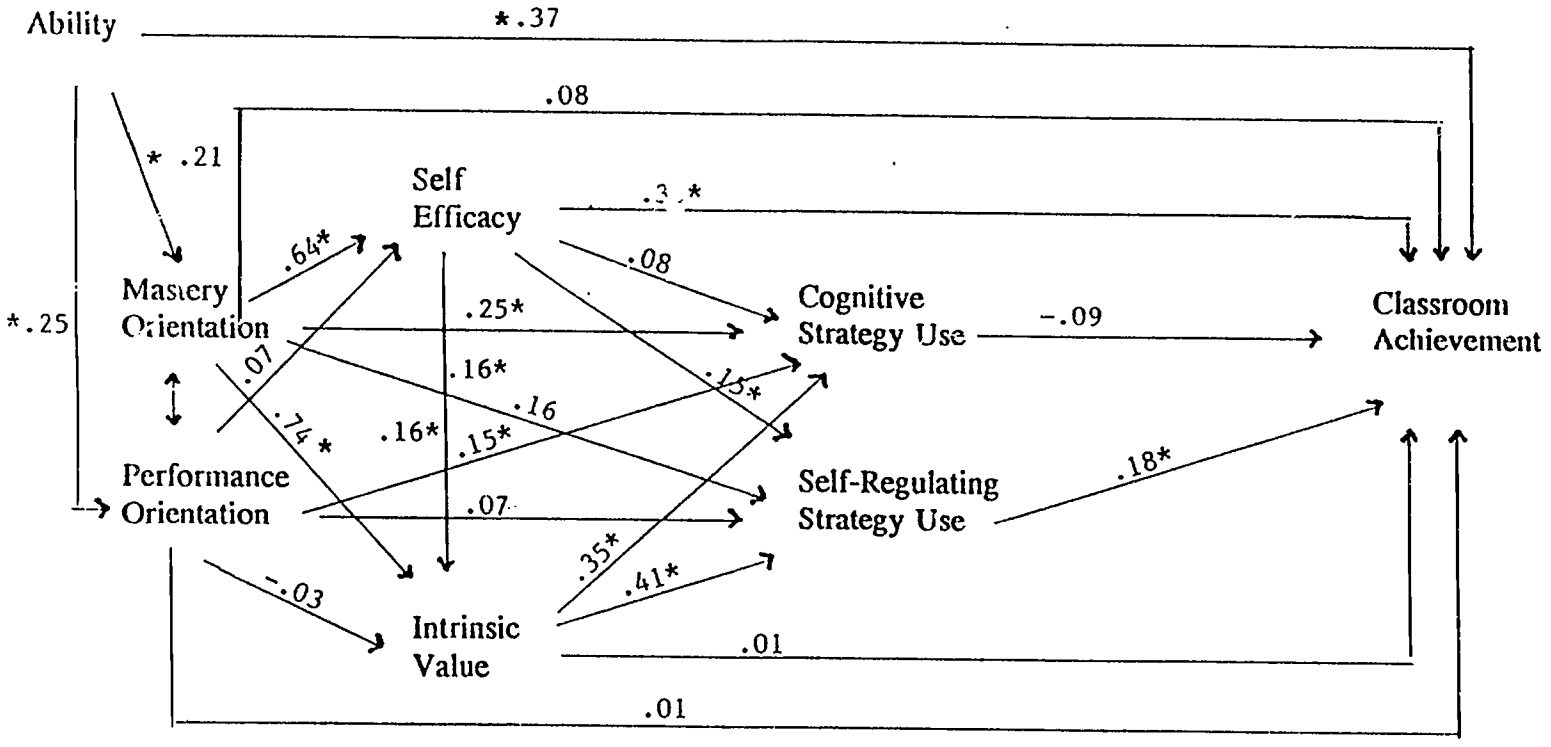
independent of its impact of students' strategy use; (d) young adolescents' intrinsic value would directly predict their use of cognitive and self-regulating strategies and their classroom achievement; and (e) students' use of cognitive and self-regulating strategies would directly predict their classroom achievement. The distinction between Model One and Model Two was the addition of a path between cognitive and self-regulating strategies in Model Two. This path was included to test the hypothesis that cognitive strategies are important for learning from expository text, even if not directly predictive of classroom achievement (Pintrich & DeGroot, 1990).

Analyses of the two structural models (see Figures 1 and 2) revealed that Model Two (X^2_4 = 9.08, N = 226, p = .06; Goodness of Fit Index = .99; mean square residual = .02) was the model that best fit the data (Model One X^2_5 = 40.31, N = 226, p = .00; Goodness of Fit Index = .96; mean square residual = .04). The analysis of Model One resulted in p = .00. This indicated that there was a statistical difference between the data and the model; the data did not fit the model. Conversely, the analysis of Model Two resulted in p = .06, indicating that there was no statistical difference between the data and the model; the data fit the hypothesized model.

Significant standardized path coefficients ($p < .05$) (see Figure 2) indicate that both students' mastery (β = .25) and performance (β = .15) goal orientation as well as their intrinsic

Figure 1

Model One

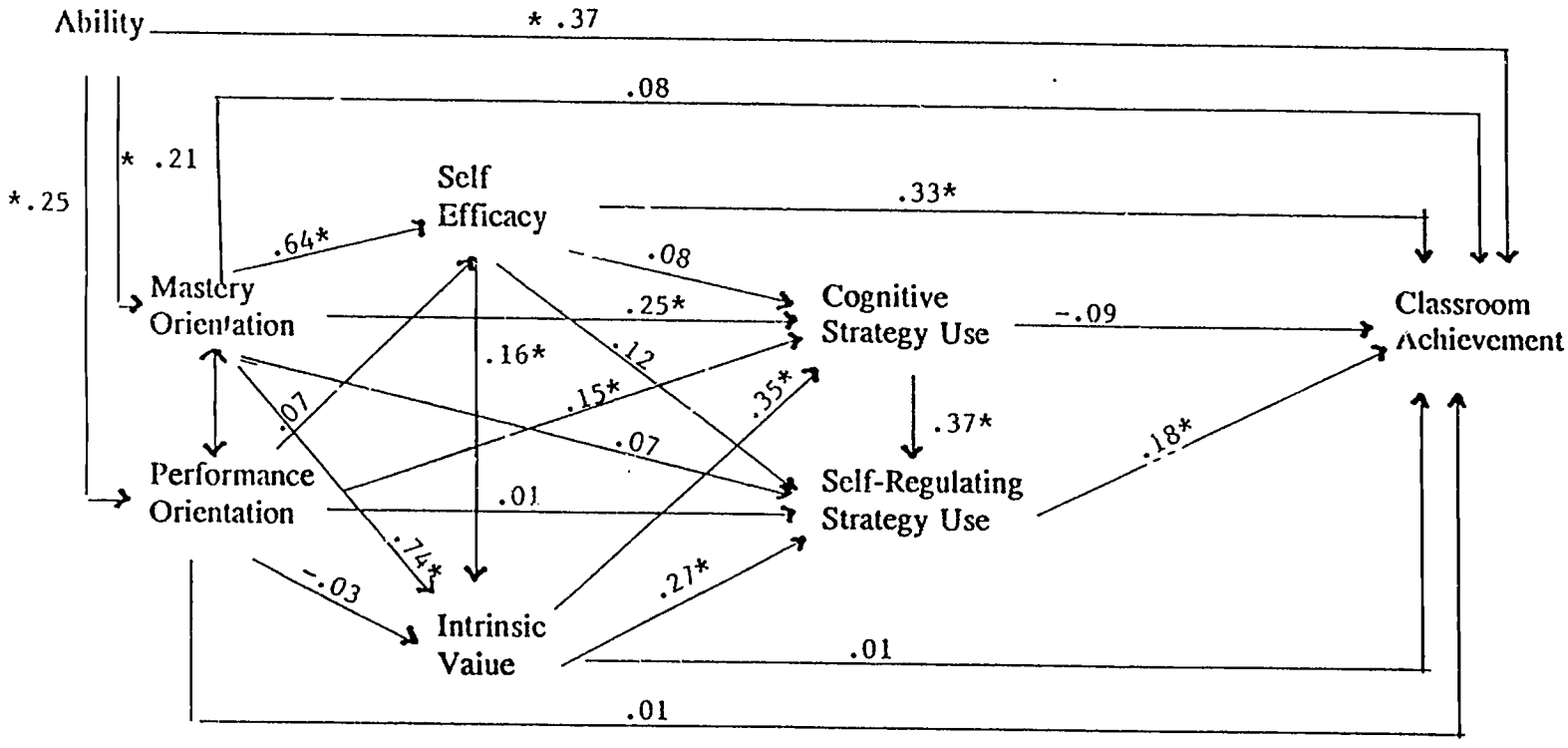


*p < .05

Figure 1. Young Adolescents' strategy use with expository text - Model One. X^2 (5, N=226) = 40.31, p = .00. Goodness of fit = .96, root mean residual = .04.

Figure 2

Model Two



*p < .05

Figure 2. Young Adolescents' strategy use with expository text - Model Two. X^2 (4, N=226) = 9.08, p = .06. Goodness of fit = .99, root mean residual = .02.

value (β = .35) predicted their use of cognitive strategies with expository text. Thus, higher levels of mastery as well as performance orientation directly predicted young adolescents' cognitive strategy use; however, a high level of mastery orientation was a stronger predictor of cognitive strategy use than a high level of performance orientation. Significant path coefficients of Model Two also show that students' intrinsic value (β = .27) directly and significantly predicted their use of self-regulating strategies with expository text. The impact of higher levels of mastery and performance orientation on students' use of self-regulating strategies was weak and not significant. Interestingly, students' self-efficacy did not significantly predict their use of cognitive or self-regulating strategies with expository text.

The evaluation of Model Two indicates further that motivation, as well as strategy use was important for the classroom achievement of the young adolescents included in this study. Specifically, higher levels of self-efficacy (β = .33) and self-regulating strategy use (β = .18), but not cognitive strategy use, significantly predicted higher levels of classroom achievement. The impact of students' cognitive strategy use on their classroom achievement was mediated by their use of self-regulating strategies.

The distinction between Model One and Model Two (see Figures 1 and 2) is the path between cognitive and self-regulating strategies. This path was constrained in Model One to further

test the hypothesis that cognitive strategies are important for learning from expository text, even if not directly predictive of classroom achievement. Analyses of Models One (X^2_5 = 40.31, N = 226, p = .00; Goodness of Fit Index = .96; mean square residual = .04) and Two (X^2_4 = 9.08, N = 226, p = .06; Goodness of Fit Index = .99; mean square residual = .02) support this hypothesis; the chi square analysis of the goodness-of-fit of the different models indicates that Model One did not fit the data. Students' use of self-regulating strategies (β = .18) significantly predicted classroom achievement; their use of cognitive strategies did not. Rather, students' use of cognitive strategies (β = .37) directly predicted their use of self-regulating strategies which in turn predicted classroom achievement.

Relationship to Other Research

The results of the present study support as well as extend the research of others who have examined the relationships among students' motivation, strategy use, and achievement. The present findings support a cognitive theory of learning that includes motivation as an important mediator of students' use of strategies (Brown et al., 1983; Garner, 1990; Paris et al., 1983; Paris et al., 1991). Students' intrinsic value, mastery orientation and performance orientation directly and significantly predicted their use of learning strategies with expository text. The findings also support an expectancy x value

theory of achievement motivation (Eccles, 1983; Pintrich & DeGroot, 1990). For the young adolescent students in this study, self-efficacy directly predicted their classroom achievement, while intrinsic value indirectly influenced classroom achievement through its impact on students' use of self-regulating strategies.

More specifically, results from this study replicate the findings of those who have shown that students' mastery goal orientation has an important impact on their use of strategies (Ames & Archer, 1988; Meece et al., 1988; Nolen, 1988); they also support those who have concluded that a high level of mastery orientation is more important for student's use of strategies than a high level of performance orientation (Ames & Archer, 1988; Nolen, 1988).

Other researchers have also shown that students' self-efficacy (Ames & Archer, 1988; Bouffard-Bouchard et al., 1991; Pintrich & DeGroot, 1990) and intrinsic value (Pintrich & DeGroot, 1990; Pokay & Blumenfeld, 1990) predicted their strategy use. In contrast to others (Ames & Archer, 1988; Bouffard-Bouchard et al., 1991; Pintrich & DeGroot, 1990), we did not find that students' self-efficacy directly influenced their use of cognitive or self-regulating strategies. For this particular group of students, confidence in their ability in social studies was important instead for predicting their classroom achievement (Pintrich & DeGroot, 1990). Like Pintrich and DeGroot (1990) and Pokay and Blumenfeld (1990), we found that students' intrinsic

value predicted their use of both cognitive and self-regulating strategies, but did not directly predict their classroom achievement.

Similar to Pintrich and DeGroot (1990), we found that self-regulating strategy use, but not cognitive strategy use directly affected students' classroom achievement. The eighth graders surveyed reported that they used cognitive strategies (cognitive strategy mean = 3.44; self-regulating strategy mean = 3.17; n = 226); but analyses of Model One A and Model Two A indicate that students with higher levels of classroom achievement were those who used their cognitive strategies in a self-regulating way. These results are related to theories of metacognition (Brown et al., 1983; Flavell, 1976, 1981; Garner, 1987) and self-regulation (Paris et al., 1983; Paris & Oka, 1986b; Corno, 1986) that emphasize the importance of both cognitive and metacognitive (i.e., monitoring, regulating) strategies working together to accomplish a task such as processing expository text.

The present study extends other research that has examined the relationships among students motivational processes, strategy use, and achievement by hypothesizing and testing a model that included students' goal orientation as well as their individual beliefs about their self-efficacy and intrinsic value; their use of cognitive and self-regulating strategies with expository text; and their classroom achievement. In so doing we found that performance, as well as mastery, orientation was a significant predictor of students' cognitive strategy use; intrinsic value,

but not self-efficacy, predicted strategy use; self-efficacy, but not intrinsic value, predicted classroom achievement; and self-regulating strategies seemed to act as a mediating variable between cognitive strategy use and classroom achievement.

Yet there are limitations to this study. The results that are reported in this study are based on an hypothesized model of students' strategy use. From our interpretation of the research, we specified the paths between variables in a particular way. It is possible that another model with differently specified paths might also fit these data. It is also possible that the results of the study were limited by the exclusion of variables that are important predictors of students' strategy use. For example, other researchers have shown that students' attributions of prior successes and failures (e.g., Carr & Borkowski, 1989; Short & Ryan, 1984) were significantly related to their strategy use. We were unable, however, to include the attribution and anxiety variables in the models we tested because the distribution of students' scores was nonnormal. Thus, the results that are reported may be biased.

By design, this study presents a snapshot of a "moment in time"; it focuses on the way young adolescents' motivational processes, strategy use, and achievement are related at a given point in time. It does not examine the impact of motivation variables on achievement as students move through the middle grades (Paris & Oka, 1986a; Wigfield & Eccles, 1989) or provide insight into the hypothesized (Borkowski et al., 1991; Carr &

Borkowski, 1989; Corno, 1986) reciprocal relationship between students' motivation and strategy use. This study does, however, provide empirical evidence for the way, at a particular point in time, young adolescent students' self-efficacy, intrinsic value, and goal orientation relate to their use of cognitive and self-regulating strategies with expository text; it also provides empirical evidence for the way young adolescent students' self-efficacy, intrinsic value, goal orientation, cognitive strategy use, and self-regulating strategy use relate to their classroom at a particular point in time. In so doing, we believe that it provides important information for educators and researchers.

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Appendix A

Attribution Questions

1. Here is a list of reasons some students have given to explain why they have done well on a social studies test. Think about a time that you did well on a test or a time you did better than you usually do. Read each reason and then tell me how important it was for explaining why you did well on the test. You may have done well for more than one reason.

Reason 1: **Because I am smart.**

|---------|---------|---------|---------|
a very important reason — not an important reason

Reason 2: **Because I studied very hard for the test.**

|---------|---------|---------|---------|
a very important reason — not an important reason

Reason 3: **Because the test was very easy.**

|---------|---------|---------|---------|
a very important reason — not an important reason

Reason 4: **Because I was lucky.**

|---------|---------|---------|---------|
a very important reason — not an important reason

Reason 5: **Because I used good strategies to study.**

|---------|---------|---------|---------|
a very important reason — not an important reason

Reason 6: **Because other people helped me study.**

|---------|---------|---------|---------|
a very important reason — not an important reason

2. Here is a list of reasons some students have given to explain why they have done poorly on a social studies test. Think about a time that you did not do well on a test or a time you did worse than you usually do. Read each reason and then tell me how important it was for explaining why you did not do well on the test. You may have done poorly for more than one reason.

Reason 1: Because I am not smart.

|---------|---------|---------|---------|
a very not an
important reason important reason

Reason 2: Because I didn't study very hard for the test.

|---------|---------|---------|---------|
a very not an
important reason important reason

Reason 3: Because the test was very hard.

|---------|---------|---------|---------|
a very not an
important reason important reason

Reason 4: Because I was not lucky.

|---------|---------|---------|---------|
a very not an
important reason important reason

Reason 5: Because I didn't use good strategies to study.

|---------|---------|---------|---------|
a very not an
important reason important reason

Reason 6: Because other people wouldn't help me study.

|---------|---------|---------|---------|
a very not an
important reason important reason

Adapted from
Stevenson, H. W., Lee, S., Chen, C., Stigler, Hsu, C., & Kitamura, S. (1990). Contexts of achievement (Vol. 55) (Serial No. 221). Society for Research and Child Development.

Appendix B

Motivational Beliefs Questions

Anxiety

1. When I am in social studies class, I feel very much at ease and relaxed. (REVERSE SCORE)
2. I get so nervous my mind goes blank when I am doing social studies.
3. I am so nervous during a social studies test that I cannot remember facts I have learned.
4. I worry a great deal about social studies tests.
5. I get scared when my teacher calls on me in social studies class.

Intrinsic Value

6. I like what I am learning in this social studies class.
7. I prefer social studies assignments that are challenging so I can learn new things.
8. It is important for me to learn what is being taught in social studies.
9. Even when I do poorly on a social studies test I try to learn from my mistakes.
10. I think that what we are learning in social studies is interesting.
11. I choose social studies projects that will help me learn even if they require more work.
12. I think I will be able to use what I learn in social studies in other classes.
13. I prefer social studies assignments that I can do well on without much struggle. (REVERSE SCORE)
14. Understanding social studies is important to me.
15. I think that what I am learning in social studies class is useful for me to know.

Self-efficacy

16. I know that I will be able to learn the material for this social studies course.

17. I am sure I can do an excellent job on the projects and tasks assigned for this social studies class.

18. Compared with other students in this class I think I know a great deal about social studies.

19. I expect to do very well in this social studies class.

20. Compared with others in this class, I think I'm a good social studies student.

21 I think I will receive a good grade in social studies.

22. My study skills are excellent compared with others in this social studies class.

23. I'm certain I can understand the ideas taught in this social studies course.

*Adapted from:

Pintrich, P. R., & Degroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. Journal of Educational Psychology, 82(1), 33-40.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. Journal of Educational Psychology, 80(3), 260-267. (Item No. 19)

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Simpson, R., & Oliver, S. Student Questionnaire XIII. (Item No. 20)

Appendix C

Achievement Goal Orientation Questions

Mastery Orientation

1. I feel good when I'm working on a difficult assignment in social studies.
2. I enjoy learning new things in social studies.
3. I feel good when I know I have worked hard in social studies.
4. In social studies, I do extra work because I want to learn new things.
5. It's important to keep trying even though I make mistakes in my social studies work.
6. I work hard in social studies because I want to learn new things.
7. I feel that making mistakes is a part of learning in social studies.
8. In social studies, I try to find answers to questions on my own.

Performance Orientation

9. I feel good when I do better than other students on a social studies test.
10. I don't care about the social studies grades other students get. (REVERSE SCORE)
11. I worry when the work in social studies is difficult.
12. Doing better than others in social studies is important to me.
13. I feel bad if I don't get a high grade in social studies.
14. The reason I work hard in social studies is to get a high grade.
15. I really don't like to make mistakes in social studies.
16. I feel bad when I do not do as well as others in social studies.

*Adapted from:

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. Journal of Educational Psychology, 80(3), 260-267.

Appendix D

Learning Strategies Questions

Cognitive Strategies

1. When reading social studies, I try to put together the ideas I am reading about with what I already know.

2. I outline the chapters in my social studies book to help me study.

3. I try to understand what the teacher is saying in social studies even if it doesn't make sense.

4. It is hard for me to decide what the main ideas are in social studies assignments I read. (REVERSE SCORE)

5. When I do social studies homework, I try to remember what the teacher said in class so I can answer the questions correctly.

6. When I am studying a social studies topic, I try to make the different ideas fit together.

7. In social studies I use what I have learned from old homework assignments and the textbook to do new assignments.

8. When I study for a social studies test, I try to figure out how the discussion in class fits with what I read from the book.

9. When I study for a social studies test, I try to remember as many facts as I can.

10. When I read material for this social studies class, I say the words over and over to myself to help me remember.

11. When I study social studies, I put important ideas into my own words.

12. When studying social studies, I copy my notes over to help me remember material.

13. When I study for a social studies test, I practice saying the important facts over and over to myself.

Self-regulating Strategies

14. Before I begin studying social studies I think about the things I will need to do to learn.

15. I work hard to get a good grade in social studies even when I don't like the class.

16. When I'm reading social studies, I stop once in a while and go over what I have read.

17. I work on practice exercises and answer end-of-chapter questions in social studies even when I don't have to.

18. I often find that, even though I have been reading for social studies class, I don't know what it is all about. (REVERSE SCORE)

19. I find that when the teacher is talking about social studies I think of other things and don't really listen to what is being said. (REVERSE SCORE)

20. Even when social studies study materials are dull and uninteresting, I keep working until I finish.

21. When social studies work is hard, I either give up or study only the easy parts. (REVERSE SCORE)

22. In social studies I ask myself questions to make sure I know the material I have been studying.

Adapted from:

Pintrich, P. R., & Degroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. Journal of Educational Psychology, 82(1), 33-40.