

POSSIBLE MAJOR INFLUENCES OF CHILDREN LEARNING SOCIAL STUDIES ON ACADEMIC SELF CONCEPT AND ACHIEVEMENT

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Abstract: This study was aimed at finding the best model to explain pupil academic attainment in learning social studies. The data came from pupils learning Social Studies at grade 3 and 4 of primary schools. The structural equation model contained 2 exogenous constructs – attitudes toward school and locus of control – and 2 endogenous constructs – self-concept and academic achievement. It was confirmed that the academic self-concept and achievement related to each other and both were influenced by attitudes toward school and internal locus of control. The model was fitting differently for different grade.

Keywords: academic self-concept, cognitive achievement, attitudes to school, locus of control.

An important component of educational attainment is academic self-concept. The academic self-concept can be defined as how a student views his or her academic ability when compared with other students (Cokley, 2003), and consists of attitudes, feelings, and perceptions about one's academic skills (Lent, Brown, & Gore, 1997). Self-appraisals, such as academic self-concept, are assumed to be related to motivation and achievement because "individuals who think well of themselves are believed to be more motivated to succeed" (Graham, 1994). Consistent with Graham's statement, academic self-concept has been correlated with academic achievement for all students (Cokley, 2003; Reynolds, 1988; Witherpoon, Speight, & Thomas, 1997) and with intrinsic motivation (Cokley, et al, 2001). When individuals see themselves as academically and intellectually capable students, and when this idea is reinforced by teachers and family, it is assumed they are more likely to want to do well in school. While researchers have focused on identifying factors that contribute to higher academic achievement, very little attention has focused on identifying factors that contribute to students' having a positive academic self-concept.

Academic self-concept is an important psychological construct that has been "cast in a motivational framework" (Graham, 1994). An understanding of the motivation of students requires an understanding of how they construct the academic self. Additional psychometric research guided by theory in this area will greatly facilitate our understanding of the perceptions, feelings, and attitudes of students regarding their academic skills.

Attribution theory provides a framework for understanding the reasons, or causal attributions; individuals give to explain why certain outcomes occur. Attribution theorists believe that causal attributions are one of several important determinants of behavior and that humans seek to understand the world so that they can make causal conclusions (Graham & Weiner, 1996). Graham (1997) points out that ability and effort are the most dominant perceived causes used in the culture. Specifically, when an individual succeeds, he tends to attribute it either to his ability ("I am smart") or his effort ("I work very hard"). Likewise, when an individual fails, he tends to attribute it either to his ability ("I am not very smart) or his effort ("I do not work very hard").

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Using an attributional framework, Laar (2000) speaks to his finding, explaining how students maintain a high sense of self in spite of poor academic performance. Laar cites Wiener's (1986) attributional theory of motivation and emotion, which states that attributing poor outcomes to internal causes (e.g., ability) results in low self-esteem, while attributing poor outcomes to external causes (e.g., discrimination) protects and maintains self-esteem. Applying this theory to the paradox of high self-esteem and low academic achievement among students, Laar theorizes that high self-esteem is maintained by attributing poor grades to biased teachers. By making external attributions, students can disassociate their self-esteem from various achievement outcomes such as grade point average.

The review of the literature reveals that an attributional approach has been the predominant theoretical framework used to examine the motivation of students. However, there are other theoretical frameworks that shed light on the complex nature of student motivation and achievement. Self-determination theory (Deci & Ryan, 1985) is a non-attributional explanation that has generally been overlooked in conceptualizing the motivation of students.

Self-determination theory is informed by deCharms's (1968) concept of the perceived locus of causality. According to self-determination theory, motivated behavior can range from being self-determined, where the locus of causality is internal, to being controlled, where the locus of causality is external (Deci, et al, 1991). Self-determined behavior occurs when one chooses to perform an act and the choice is free of external influence. This behavior is seen as intrinsic because it originates from the self. An individual who does not commit a crime because he believes it is morally wrong is exhibiting self-determined behavior. Controlled behavior occurs when one performs an act to comply with some external influence. This behavior is seen as extrinsic because it is regulated outside the self.

When applying self-determination theory to academic motivation, there are two primary types of motivated academic behavior: intrinsic and extrinsic (Deci, et al, 1991). Intrinsic academic motivation involves engaging in academic behaviors for their own sake (i.e., learning for the sake of learning). These intrinsically motivated behaviors can be subdivided into three types: (1) intrinsic motivation *to know* refers to engaging in behavior for the gratification one gets from learning something new; (2) intrinsic motivation *to accomplish* refers to engaging in behavior for the enjoyment one experiences when accomplishing something; and (3) intrinsic

motivation *to experience* stimulation refers to engaging in behavior for the sensory arousal one gets from learning. A child who reads a book because she enjoys reading and learning new words is intrinsically motivated to know and to accomplish.

Extrinsic academic motivation involves engaging in academic behaviors because they are seen as instrumental to achieving some goal. Extrinsically motivated behaviors can also be divided into three types. The first type, *identified regulation*, refers to engaging in behavior because it is valued and internalized. For example, a student who does an independent research project because she sees it as important to get into graduate school represents this type of motivation. The behavior has become more fully a part of the self, but it is not intrinsic because it is performed primarily because of its usefulness or instrumentality (Deci, et al, 1991). The second type, *introjected regulation*, refers to engaging in behavior because of internalized rules or demands to behave in a certain way. A student who goes to class on time because that is what good students do represents this type of motivation. The third type, *external regulation*, refers to engaging in behavior because of the expected reward or the threat of punishment, and represents the least self-determined behavior of extrinsic motivation. A student who goes to class so that he does not get penalized for exceeding three allowable absences represents this type of behavior.

When students engage in academic behavior with no explicit purpose in mind, they are amotivated (Deci, et al, 1991). Moreover, students are amotivated when they do not perceive their behaviors as linked to any outcomes. These individuals see their behaviors being caused by external forces outside of their control. Students who are ambivalent about college are typically amotivated. These different types of academic motivation have been linked to a variety of educational outcomes and personal adjustment (Deci, et al, 1991). Students who are more intrinsically motivated are more likely to stay in school than students who are less intrinsically motivated. Intrinsic motivation has also been linked to positive academic performance (Deci, et al, 1991; Vallerand, et al, 1993), more enjoyment of academic work and more satisfaction with school (Vallerand, et al, 1989), greater conceptual learning (Deci & Ryan, 1985), more positive perceptions of faculty encouragement (Cokley, 2003), and higher self-esteem (Deci, et al, 1991). Students who are more extrinsically motivated experience greater anxiety and a poorer ability to cope with failures (Ryan & Connell, 1989).

In summary, research based on self-determination theory suggests that promoting greater self-determination, specifically intrinsic motivation, is related to more positive academic and psychological outcomes. However, this body of research has been primarily limited to studies with samples of students. Further, through an examination of intrinsic motivation, self-determination theory provides a framework through which to test directly the assumption that attitudes toward schools, locus of control, academic achievement, are associated with academic self-concept.

METHOD

The research focussed on exploring what was the best model to explain pupil academic concept in relation to learning social studies.

This study was carried out in the context of Sidoarjo School Improvement Program (SSIP). The program was aimed at improving the quality in schools. There were four specified objectives. Firstly, develop and implement objectives in cognitive, social and affective domains, especially the synergy between the three domains. Secondly, develop up to date learning opportunities in the form of teaching-learning packages and implement those packages in educational practice. Thirdly, improve the quality of instruction within the programs by improving the methodology and the procedures of instruction, stressing more active involvement of pupils, more adaptive (teaching programs) and improved instructional methodology of the teacher. Fourthly, improve the conditions for classroom learning and teaching at the school level to establish school – university partnership.

The social studies subject was the focus of this study because the only possible room for intervention and innovation was through local content related to social studies.

This study was carried out at primary schools coming from six smaller school-cohorts, named *gugus*, in the district of Sidoarjo. The total number of schools involved was 34, from the three subdistricts of Sidoarjo as an urban area, Krian as a subrural area, and Krembung as a rural. The sampled children were from grade 3 and 4 as described in Table 1.

Those 34 schools consisted of 1884 pupils in grade 3 and 4. In this report, due to missing values, a sample of 1547 pupils were involved. The average age of the pupils in grade 3 was at time of measuring 7 years and 5 months. The average age of the pupils in grade 4 at the same time was 8 years and

7 months. There were more male than female pupils in the schools, except for the experiment schools of *gugus* Krembung.

Table 1. Number of Participant Pupils

Cluster	Participant Pupils		Total
	Grade 3	Grade 4	
Sidoarjo	292	237	529
Krian	226	202	428
Krembung	263	327	590
Total	781	766	1547

The data were collected by using tests and questionnaires. The content-related tests (CRT) were developed by a team consisting of teachers and university staff members. ISERP scales (Creemers, 1997; Teddlie & Reynolds, 2000) were translated, validated, and administered to the pupils.

Content related tests (CRT) were developed to inquire the pupil knowledge on the topics of Social Studies after being taught. The tests were subdivided into four tests and contained all topics taught during SSIP. Due to the limited time it was not possible to test the pupils in time for the first topic, so this topic was tested together with the second test and therefore became the first test. The third topic was tested in the second test. The tests for grade 3 consisted of 25 questions in the first test and 27 questions in the second. The tests for grade 4 consisted of 31 questions in the first test and 25 questions in the second. Each correct answer was scored one (1.00) point. The results show separate as well as cumulative outcomes.

The ISERP scales (Creemers, 1997; Teddlie & Reynolds, 2000; Reynolds et al) were adopted. The scales were translated and validated by comparing the original and the back-translated items, factor analyzing and estimating the reliability of each scale. The smiley format was in three scales i.e. *pupil attitudes towards school* and *self-concept*. In both scales, the pupils could choose between five or three options, which were presented in understandable smiling and sad faces. For instance, if a pupil thought positive about attending school, he/she should color a smiley face. If the pupil thought negative about attending school, he/she should color a sad face. The faces were either very happy, a little happy, in between, a little sad and very sad. In the fourth item there was only the possibility to color a happy or a sad smiley. Regarding *attitudes towards school*, the pupils were asked for their general attitude towards attending school and the

subject of Social Studies. Under *Self-concept* for Social Studies, the pupils were asked about their own abilities in the subject of social studies. Another scale on *locus of control* elicits internal locus of the pupil. Internal locus means the pupil thinks about the cause of good or bad marks and understanding lessons (for instance by learning well or paying more attention). External locus means the pupil thinks the cause is not within himself, but for instance due to luck, a difficult test or bad explanation of the teacher.

This study used structural equation modeling (SEM) to investigate the relationships between attitudes toward school, locus of control, academic achievement and self-concept. This method allows researchers to combine test aspects of two different theoretical perspectives (i.e attribution theory and self-determination theory) to form a more comprehensive understanding of primary children's self-concept and achievement. In addition, by using univariate analyses some researchers would only be able to examine the relationships between any of the variables of interest without determining the ways certain variables "cause" or influence other variables. It is this specific knowledge that will be most beneficial to educators and researchers. All of the aforementioned variables have been shown to be related to various student outcomes. For the purposes of creating models, these variables include attitudes towards school, locus of control, academic achievement, and self-concept. Two models of processes hypothesized to predict self-concept among primary pupils were tested in the study. The first conceptual model (see Figure 1) consisted of attitudes toward school, locus of control, academic achievement, and self-concept. Consistent with previous research (Cokley, 2003; Cokley, et al, 2001; Deci, et al, 1991), this model proposed that attitudes toward schools

contributed to locus of control and academic achievement, and altogether contributed to self-concept.

The second conceptual model (see Figure 2) modified the first model and proposed the academic achievement as the function of the self-concept. The models being tested draw on several ideas from previous research, including the assumptions that (1) intrinsic motivation (locus of control) and attitudes towards school were positively related to academic self-concept, (2) academic achievement is related to self-concept independently, (3) academic achievement and self-concept are dependently related to the previous factors.

In finding the best model for each grade, chi-square, comparative fit index (CFI), and root mean square error of approximation (RMSEA) (Jöreskog and Sörbom, 2001) were used. The fit criteria were useful in comparing the models across the grades.

RESULTS

Several rules of thumb have been generated regarding appropriate sample size for conducting structural equation modeling. Hu and Bentler (1995), Nunnally and Bernstein (1994) suggest that as few as five subjects per variable are sufficient, assuming that latent variables have multiple indicators that are normally distributed and ten subjects per variable for other non-normally distributed latent variables. In the current study, the both models tested include a total of twenty-seven manifest variables that make four latent variables. Accordingly, the lowest appropriate sample size for this study should include 135 participants, while the more conservative number of at least 240 is recommended (Tabachnick & Fidell, 1996). The sample size in the current study used to conduct the structural equation model was well above the recommended numbers, ensuring adequate power.

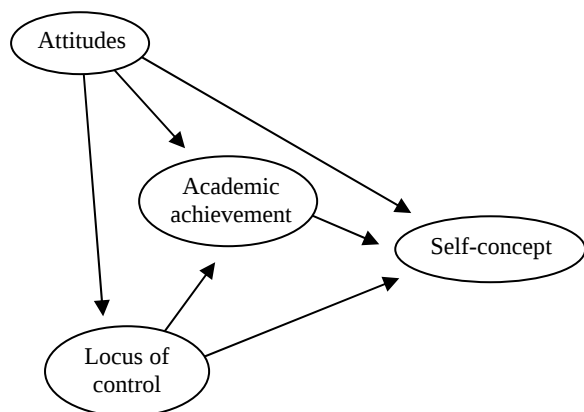


Figure 1. The First Basic Model

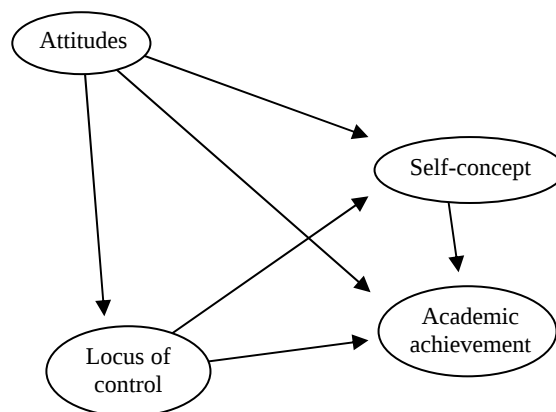


Figure 2. The Second Basic Model

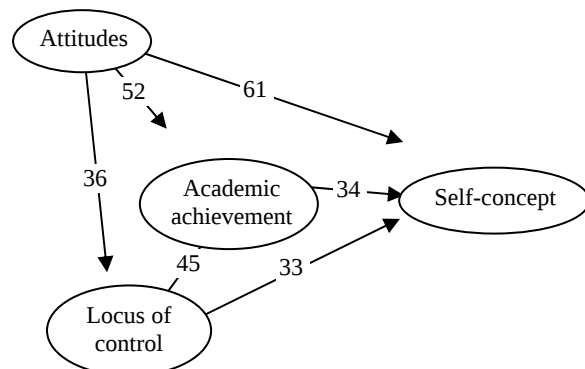
Table 2. Intercorrelations of the Scales

Scale	Attitudes	Locus of control	Self-concept	Achievement.
Attitudes	1.00			
Locus of control	0.32	1.00		
Self-concept	0.63	0.37	1.00	
Achievement	0.35	0.41	0.46	1.00

Note: N = 1547; all the coefficients were significant ($p < .01$).

Pearson correlation statistics for the research variables of this study were summarized in Table 2. Notice the relationships among variables, the correlations were generally consistent with the expectations. While weak, the relationships between the locus of control and the attitudes ($r=0.32$, $p < 0.05$), and the self-concept ($r=0.37$, $p < 0.05$) were significant. Interestingly, the relationship between the self-concept and the attitudes was the strongest ($r=0.63$, $p < 0.05$).

As Figures 3 and 4 showed, the factor with the strongest influence on academic self-concept was attitudes (grade 3: $\gamma = 0.61$, $se = 0.24$ and grade 4: $\gamma = 0.59$, $se = 0.19$). The next most important factor influencing the self-concept was academic achievement. This was true for grade 3 ($\beta = 0.34$, $se = 0.09$) and grade 4 ($\beta = 0.55$, $se = 0.16$). The second most important factor was locus of control in grade 3 ($\gamma = 0.55$, $se = 0.21$) and grade 4 ($\gamma = 0.35$, $se = 0.12$). Finally, the indirect effect of attitudes and locus of control on self-concept through the academic achievement in both models explained different tendencies: for grade 3 the attitudes toward school influenced higher ($\gamma = 0.52$, $se = 0.19$) than the locus of control ($\gamma = 0.45$, $se = 0.14$), whereas for grade 4 the attitudes ($\gamma = 0.21$, $se = 0.06$) influenced lower than the locus of control ($\gamma = 0.34$, $se = 0.11$). The other indirect effect of attitudes on self-concept through locus of control in grade 3 ($\gamma = 0.36$, $se = 0.13$) was higher than grade 4 ($\gamma = 0.30$, $se = 0.14$).

**Figure 3. The First Model on Self-Concept in Grade 3**

Figures 5 and 6 express the causal relationship of self-concept on academic achievement higher in grade 4 ($\beta = 0.56$, $se = 0.21$) than grade 3 ($\beta = 0.33$, $se = 0.16$). In addition, attitudes and locus of control had significant direct effects on the achievement: in grade 3 attitudes ($\gamma = 0.31$, $se = 0.11$) and locus of control ($\gamma = 0.22$, $se = 0.9$), in grade 4 attitudes ($\gamma = 0.35$, $se = 0.10$) and locus of control ($\gamma = 0.55$, $se = 0.21$). The indirect effects of both constructs were also found significant in both grades. The attitudes through locus of control was it found to be $\gamma = 0.35$ ($se = 0.15$) for grade 3 and $\gamma = 0.39$ ($se = 0.16$) for grade 4.

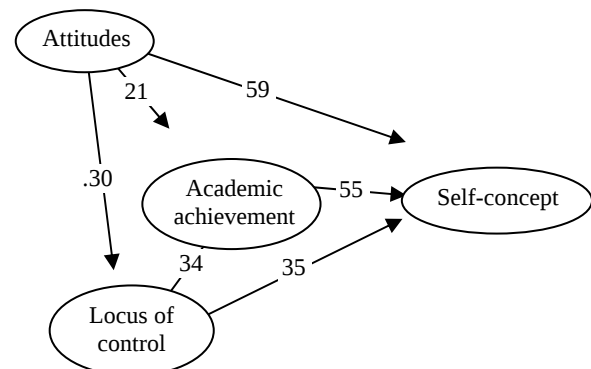
Table 3. Goodness of-Fit Indicators of the Models

Model	Chi-Square	CFI	RMSEA
First Basic Model, Grade 3	27.6*	.94	.076
First Basic Model, Grade 4	59.3*	.88	.12
Second Basic Model, Grade 3	49.07*	.87	.16
Second Basic Model, Grade 4	32.61*	.93	.079

Note: CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation.

* $p < .001$

The most commonly employed fit criteria, at least, to be used for this study were the chi-square, comparative fit index (CFI), and root mean square error of approximation (RMSEA) (Jöreskog and Sörbom, 2001). As seen in Table 3, the Chi-Square of both models for both grades were significant, none was fit. Unfortunately, the significance of chi-square is sensitive to the sample size. CFI and RMSEA appeared fit for the first basic model in grade 3 and for the second basic model in grade 4. These results would be discussed further.

**Figure 4. The First Model on Self-Concept in Grade 4**

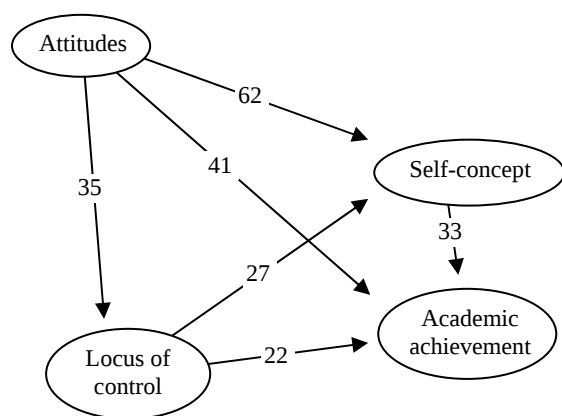


Figure 5. The Second Model on Academic Achievement in Grade 3

DISCUSSION

This study was based on the question aimed at finding the best model to explain pupil cognitive and non-cognitive attainment in learning social studies. In order to answer the question, two models were built to be compared based on grades. The results of this study indicated that two exogenous factors – attitudes toward school and locus of control – define a second-order factor structure which includes two endogenous predictors, the academic achievement and self-concept.

According to the models for both grades, the strongest direct influence on children's academic self-concept social studies was their attitudes. This finding concurs with that of Haladyna, et al, (1982), who found the correlation between quality of learning and attitudes to be very high. This clearly indicated the magnitude of the effects that pupils have on their non-cognitive learning outcomes, and on the learning process in general. Attitudes are learned and therefore the influence of other people in the student's close environment is a key factor in the development of pupil self-concept (George & Kaplan, 1998).

Many researchers contend that attitudes are important factors that can influence a student's achievement (Lester, et al, 1989; Meyer & Koehler, 1990; Papanastasiou & Papanastasiou, 2002; Shaughnessy, et al, 1983). According to Beaton, et al (1996), the TIMSS data reveal that eight-grade students with more positive attitudes had higher average achievement. Weinburgh and Englehard (1994) found that positive attitudes can be taught and can become important educational objectives. Consequently, factors such as teaching, aspiration, as well as the school climate, should be attempted to the manipulate in the future in an international context to try to positive

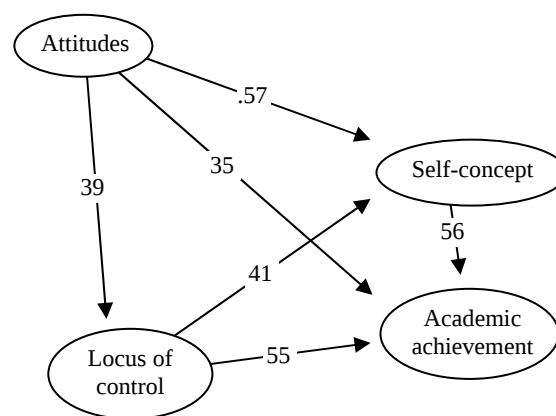


Figure 6. The Second Model on Academic Achievement in for Grade 4

influence the attitudes, self-concept, and achievement of children worldwide.

The fit statistics were applied to assess the “goodness of fit” of the Models in grade 3 and 4. The chi-square for all models were significant ($p=.00$) indicating that the data are significantly different in their fit from the models. However, it is well-known that the chi-square is sensitive to sample size and when the sample size increases, the chi-square test has the tendency to indicate a significant probability level, even with trivial differences between the original population matrix and the matrix produced by the model. As stated in the same table, the number of case used in this analysis were $N=781$ for grade 3, $N=766$ for grade 5; according to Marcoulides and Hershberger (1997), the model fit should be independent of sample size. All other indices support the hypothesis that the models fit the sample data in both grades.

More specifically, the fit indices CFI for the models revealed high values, and generally values above 0.9 are considered to indicate well-fitting models (Broome, et al, 1997; Marcoulides & Hershberger, 1997). Furthermore, the CFI is the least affected by sample size (Hu & Bentler, 1995). For all models, the RMSEA indices are small, and according to Browne and Cudeck (1993) values less than 0.08 reflect a close fit. Overall, the indices point to a close fit between the matrix produced by the models and the original population matrix for the two grades tested. It was well confirmed that the first basic model explaining the self-concept is fit for grade 3. The children's achievement affected their non-cognitive attainment in this grade. However, the second model was fit for grade 4. In that model, the self-concept was a major factor for the academic achievement.

CONCLUSION AND SUGGESTION

The patterns of causal linkages among attitudes to schools, locus of control, academic achievement, and self-concept under two structural conditions for two different grades are largely consistent, reaffirming the speculation that four sets of factors are closely linked. There is no uniform model for the grades under this study, each grade has its own fit model. These parallel patterns tended to provide the much-needed evidence to support the claim that academic achievement shall be the cause of self-concept or on the other way around. In this case, the criteria for judging the appropriateness of the model should be taken into account carefully. Frequently χ^2 is used as a criterion of 'goodness of fit', however, it is not so much convincing due to the sample size. The bigger the sample, the worse the expectation because of the significance of the results. CFI and RMSEA seemed to be better criteria because they are free from such kind of weakness.

An intriguing question arising from the present findings is: Are there other equally important learning factors that would affect the learning process of pupils? Reference to the studies on learning points

to a number of competitive factors certain contextual factors that explain collective learning (e.g. Lam, 2005) need to be considered. How do we reconcile the existing literature with the current findings? What are some the crucial relationships that might exist between structure and all these variables? What kind of reinforcement or modification can we expect when all these factors are simultaneously considered? Answer to all these questions should allow us to expand the scope of our investigation beyond the current study and provide opportunities to merge and cross-fertilize major thrusts of recent research in our effort to enhance school productivity.

The findings of this study indicate that further research should be undertaken to examine the influence of background variables on attributes, although attitudes can be attributed to a complex interaction among teaching, cognition, aspirations, and other home variables. We need further explanations based on research.

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