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Academic Optimism of Schools:

A Force for Student Achievement

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Wayne K. Hoy
School of Educational Policy and Leadership
116 Ramseyer Hall
29 West Woodruff Avenue
The Ohio State University
Columbus, OH 43210
hoy.16@osu.edu
Phone: 614 488-5064

C. John Tarter
School of Education MAR-208C
St. John's University
8000 Utopia Parkway
Jamaica, NY 11439
Ctarter@aol.com

Anita Woolfolk Hoy
159 Ramseyer Hall
29 West Woodruff Avenue
The Ohio State University
Columbus, OH 43210
hoy.17@osu.edu
Phone: 614 488-5064

Abstract

Researchers have been challenged to go beyond SES in the search for school-level characteristics that make a difference in student achievement. The purpose of this analysis was to identify a new construct, academic optimism, and then use it to explain student achievement while controlling for SES, previous achievement, and urbanicity. The setting was a diverse sample of 96 high schools; a random sample of teachers from each school provided data on the school's academic optimism; student achievement scores and demographic characteristics were obtained from the state department of education. A confirmatory factor analysis and a test of the hypotheses were done simultaneously using structural equation modeling. As predicted, academic optimism made a significant contribution to student achievement controlling for demographic variables and previous achievement. The findings support the critical nature of academic optimism.

Academic Optimism:

A Force for School Achievement

Coleman startled educators with his finding that characteristics of the school mattered little in explaining student achievement (Coleman et al., 1966). He argued that schools had only a negligible effect on student performance, and that most of the variation in student learning was a product of differences in family background. Edmonds (1979) was one of the first to dispute Coleman's conclusions. His familiar list of effective school characteristics—strong principal leadership, high expectations for student achievement, emphasis on basic skills, an orderly environment, and frequent and systematic evaluation of students—seemed to refute Coleman. Good schools were the product of good administrators. As simple as the connection seems, the empirical demonstration of direct administrative influence on student achievement has been elusive.

It is one thing to identify high-performing schools in low socioeconomic neighborhoods and attribute their performance to leadership characteristics or climate or an orderly environment, all of which may be present in that school. It is quite another matter to demonstrate a priori that school leadership or other school properties will be directly and systematically related to student success in a controlled study of a large sample. Although administrators don't believe it, the weight of the evidence suggests little or no direct relationship exists between principal leadership and student achievement (Hallinger & Heck, 1996). In fact, it is difficult to find school properties that are consistently related to student achievement when controlling for the socioeconomic

level of the school. Nevertheless, educational leaders and policy makers alike have been reluctant to conclude that schools have little or no effect on student achievement. Instead the quest has turned to the identification of school characteristics that make a difference in achievement, in spite of student socioeconomic status.

Coleman was not wrong; socioeconomic factors are powerful shapers of student performance. In fact, in large-scale studies such as Coleman (1966) or Jencks (1972) SES overwhelms the association between school properties and achievement; the influence of school factors vanishes after controlling for social factors. But Coleman was not entirely right; there are a few school characteristics that consistently predict student achievement, even when controlling for socioeconomic factors. Three organizational properties seem to make a difference in student achievement: the academic emphasis of the school, the collective efficacy of the faculty, and the faculty's trust in parents and students. We suspect there are other such school properties, but they have not been readily revealed despite continuing research.

Academic emphasis, collective efficacy, and faculty trust are tightly woven together and seem to reinforce each other as they positively constrain student performance. We first examine the research for each of these three school properties, and then we explore the theory and research that link the three together as a single powerful force explaining school performance. We call this force academic optimism, which has been demonstrated to be a general latent construct (Hoy, Tarter, & Woolfolk Hoy, 2006). In this inquiry, we plan to show that academic optimism is a general latent concept related to student achievement, even controlling for SES, previous performance, and other demographic variables.

Academic Emphasis of Schools

Academic emphasis is *the extent to which the school is driven by a quest for academic excellence—a press for academic achievement*. High, but achievable academic goals are set for students; the learning environment is orderly and serious; students are motivated to work hard; and students respect academic achievement (Hoy & Miskel, 2005; Hoy, Tarter, & Kottkamp, 1991).

Hoy and his colleagues (Hoy, Tarter, & Kottkamp, 1991) were first to demonstrate that the collective property academic emphasis of the school was positively and directly related to student achievement in high schools while controlling for SES. Whether school effectiveness was conceived as the commitment of teachers to the school, the teachers' judgments of the effectiveness of the school, or actual student test scores, academic emphasis remained a potent force. At both middle school and high school, academic emphasis and achievement were positively related, even controlling for socioeconomic factors (Hoy, Tarter, & Bliss, 1990; Hoy & Hannum, 1997; Hoy and Sabo, 1998).

The findings are the same for elementary schools. Goddard, Sweetland, and Hoy (2000), controlling for SES, school size, student race, and gender, used hierarchical linear modeling to find academic emphasis an important element in explaining achievement in both math and reading. The authors concluded, "…elementary schools with strong academic emphases positively affect achievement for poor and minority students" (p. 698).

Alig-Mielcarek and Hoy (2005) considered the influence of the instructional leadership of the principal and the academic emphasis of the school. They also found that

academic emphasis was significant in explaining student achievement, even controlling for SES. Using structural equation modeling, they found that academic emphasis of the school, not instructional leadership, was the critical variable explaining achievement. In fact, instructional leadership worked indirectly, not directly, through academic emphasis to influence student achievement.

Using different methodological approaches and school levels, the results are consistent. Whether the analysis was multiple regression, structural equation modeling, or hierarchical linear modeling, and whether the level was elementary, middle, or secondary, the findings are the same: academic emphasis is a key variable in explaining student achievement, even controlling for socioeconomic status, previous achievement, and other demographic variables.

Collective Efficacy

Social cognitive theory (Bandura, 1977; 1997) is a general framework for understanding human learning and motivation. Self-efficacy, a critical component of the theory, is an individual's belief about her or his capacity to organize and execute the actions required to produce a given level of attainment (Bandura, 1997). Efficacy beliefs are central mechanisms in human agency, the intentional pursuit of a course of action. Individuals and groups are unlikely to initiate action without a positive sense of efficacy. The strength of efficacy beliefs affects the choices individuals and schools make about their future plans and actions.

Student achievement and sense of efficacy are related. Researchers have found positive associations between student achievement and three kinds of efficacy beliefs—self-efficacy beliefs of students (Pajares, 1994, 1997), self-efficacy beliefs of teachers

(Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998), and teachers' collective efficacy beliefs about the school (Goddard, Hoy, & Woolfolk Hoy, 2000). We focus on collective efficacy of schools and student achievement because collective efficacy is a school property amenable to change.

Within schools, perceived collective efficacy represents the judgments of the group about the performance capability of the social system as a whole (Bandura, 1997). Teachers have efficacy beliefs about themselves as well as the entire faculty. Simply put, perceived collective efficacy is *the judgment of the teachers that the faculty as a whole can organize and execute actions required to have a positive effect on students* (Goddard, Hoy, & Woolfolk Hoy, 2004).

Bandura (1993) was first to show the relationship between sense of collective efficacy and academic school performance, a relationship that existed in spite of low socioeconomic status. Schools in which the faculty had a strong sense of collective efficacy flourished, whereas those in which faculty had serious doubts about their collective efficacy withered, that is, declined or showed little academic progress. Continuing research has provided support for the importance of collective efficacy in explaining student achievement.

Goddard, Hoy, and Woolfolk Hoy (2000) supported the role of collective efficacy in promoting school achievement in urban elementary schools. They hypothesized that perceived collective efficacy would enhance student achievement in mathematics and reading. After controlling for SES and using hierarchical linear modeling, they found that collective efficacy was significantly related to student achievement in urban elementary schools.

Hoy, Sweetland, and Smith (2002), continuing this line of inquiry, predicted school achievement in high schools using collective efficacy as the central variable. They found collective efficacy was the key variable in explaining student achievement; in fact, it was more important than either socioeconomic status or academic emphasis. Hoy and his colleagues concluded that the school norms supporting academic achievement and collective efficacy are especially important in motivating achievement for both teachers and students, but academic emphasis is most forceful when collective efficacy is strong. That is, academic emphasis works through collective efficacy. They further theorized that when collective efficacy was strong, an emphasis on academic pursuits directed teacher behaviors, helped them persist, and reinforced social norms of collective efficacy.

In a similar vein, Goddard, LoGerfo, and Hoy (2004) tested a more comprehensive model of perceived collective efficacy and student achievement. Using structural equation modeling, they also found that collective efficacy explained student achievement in reading, writing, and social studies regardless of minority student enrollment, urbanicity, SES, school size, and earlier achievement.

Research has consistently demonstrated the power of positive efficacy judgments in human learning, motivation, and achievement in such diverse areas as dieting, smoking cessation, sports performance, political participation, and academic achievement (Bandura, 1997; Goddard, Hoy, & Woolfolk Hoy, 2004). Similarly, the results of the school studies reported above underscore the importance of collective efficacy.

Faculty Trust in Parents and Students

Faculty trust in parents and students is the third school property that is related to student achievement. Faculty trust in parents and students is a collective school property

in same fashion as collective efficacy and academic emphasis. Surprisingly, trust in parents and trust in students is a unitary concept. Although one might think that the two are separate concepts, several factor analyses have demonstrated they are not (Hoy & Tschannen-Moran, 1999; Goddard, Tschannen-Moran, and Hoy, 2001). Further, Bryk and Schneider (2002) make the theoretical argument that teacher-student trust in elementary schools operates primarily through teacher-parent trust.

Trust is one's vulnerability to another in the belief that the other will act in one's best interests. Tschannen-Moran and Hoy (2000), after an extensive review of the literature, concluded that trust is a general concept with at least five facets: benevolence, reliability, competence, honesty, and openness. Although it is theoretically possible that these facets of trust may not vary together, the research on schools shows all five facets of trust in schools do indeed vary together to form an integrated construct of faculty trust in schools, whether the schools are elementary (Hoy & Tschannen-Moran, 1999; Hoy & Tschannen-Moran, 2003) or secondary (Smith, Hoy, & Sweetland, 2001). Thus, we defined faculty trust as *the group's willingness to be vulnerable to another party based on the confidence that the latter party is benevolent, reliable, competent, honest, and open* (Hoy & Tschannen-Moran, 2003).

Cooperation and trust should set the stage for effective student learning, but only a few studies have examined this relationship. Goddard, Tschannen-Moran, and Hoy (2001) examined the role of faculty trust in promoting school achievement of urban elementary schools. Using a multi-level model, they demonstrated a significant direct, relationship between faculty trust in clients (students and parents) and higher student achievement, even controlling for socioeconomic status. Like collective efficacy, faculty

trust was a key property that enabled school to overcome some of the disadvantages of low SES.

Hoy (2002) examined the trust-achievement hypothesis in high schools and again found that faculty trust in parents and students was positively related to student achievement while controlling for socioeconomic factors. He theorized that trusting others is a fundamental aspect of human learning because learning is typically a cooperative process, and distrust makes cooperation virtually impossible. When students, teachers, and parents have common learning goals, then trust and cooperation are likely ingredients that improve teaching and learning.

Finally, Bryk and Schneider (2002) performed a three-year longitudinal study in 12 Chicago elementary schools. Using HLM models, survey and achievement data, and in-depth interviews, they concluded that relational trust was a prime resource for school improvement. Trust and cooperation among students, teachers, and parents influenced regular student attendance, persistent learning, and faculty experimentation with new practices. In brief, trust among teachers, parents, and students produced schools that showed marked gains in student learning, whereas schools with weak trust relationships saw virtually no improvement. The research of Bryk and Schneider and that of Hoy and his colleagues reinforce each other in the common conclusion that faculty trust of students and parents enhances student achievement.

Common Themes and A New Construct: Academic Optimism

Why are academic emphasis, collective efficacy, and trust consistently related to student achievement when controlling for SES whereas other school-level properties are

not? Is there some latent construct that under girds these three properties? Are there some common theoretical bases for these properties?

Academic emphasis, collective efficacy, and faculty trust are collective properties analyzed in this inquiry. Aggregated individual perceptions of the *group,* as opposed to the *individual,* assess these perceived properties as emergent organizational attributes, that is, the variables are emergent group-level attributes rather than simply the sum of teachers' perceived personal attributes (Bandura, 1986, 1997).

The research that we have just reviewed suggests that academic emphasis, collective efficacy beliefs, and faculty trust shape the norms and behavioral expectations of the school. Coleman (1985, 1987) explained that group norms give organizational members some control over the actions of others because individual actions have consequences for the group. When teachers behave in ways that conflict with group norms, the group sanctions their behavior; in fact, Coleman argued that social sanctions are proportionate to the importance of the norms. For example, when a faculty is highly committed to academic performance, the organization will sanction teachers who do not persist in their educational efforts to help students achieve. Likewise, a strong sense of collective efficacy in a school creates a powerful set of norms and behavioral expectations that reinforces the self-efficacy beliefs of teachers. The press for efficacious teacher behaviors will be accompanied by social sanctions for those who lack self-efficacy. Similar cases can be made for trust in parents and students and academic emphasis. When the faculty has strong norms that support teachers' trusting and working with parents, the group will press for cooperation and collaboration. The power of the

school culture and its values and norms rests in large part on the social persuasion exerted on teachers to constrain certain actions and to restrain others.

Three collective properties-- academic emphasis, efficacy, and trust --are not only similar in their nature and function, but also in their potent and positive influence on student achievement. The three concepts have much in common; in fact, Hoy and his colleagues (Hoy, Tarter, & Woolfolk Hoy, 2006) demonstrated that the three collective properties worked together in a unified fashion to create a positive academic environment called *academic optimism*.

Many conceptions treat optimism as a cognitive characteristic—a goal or expectancy based on knowledge and thinking (Peterson, 2000; Snyder et al., 2002). Our conception of academic optimism includes both cognitive and affective (emotional) dimensions and adds a behavioral element. Collective efficacy is a group belief or expectation; it is *cognitive*. Faculty trust in parents and students is an *affective* response. Academic emphasis is the press for particular *behaviors* in the school workplace (Hoy, Tarter, & Woolfolk Hoy, 2006). Hoy and his colleagues conclude that, "Collective efficacy reflects the thoughts and beliefs of the group; faculty trust adds an affective dimension, and academic emphasis captures the behavioral enactment of efficacy and trust." (p. 14). Academic optimism paints a rich picture of human agency that explains collective behavior in terms of cognitive, affective, and behavioral dimensions.

The relationships between the three major dimensions of academic optimism have been graphically presented as a triadic set of interactions with each element functionally dependent on the others. Faculty trust in parents and students encourages a sense of collective efficacy, and collective efficacy reinforces and enhances the trust. Similarly,

when the faculty trusts parents, teachers can insist on higher academic standards with confidence they will not be undermined by parents, and high academic standards in turn reinforce the faculty trust. Finally, when the faculty believes it has the capability to organize and execute actions for a positive effect on student achievement, it emphasizes academic achievement, and academic emphasis in turn reinforces a strong sense of collective efficacy. In sum, all the elements of academic optimism are in transactional relationships with each other and interact to create a culture of academic optimism in the school. This postulated reciprocal causality between each pair of elements is shown in Figure 1.

Insert Figure 1 about here

Hoy and his colleagues (2006) chose the term academic optimism to reflect beliefs about agency in schools. They explain:

> Optimism is an appropriate overarching construct to unite efficacy, trust, and academic emphasis because each concept contains a sense of the possible. Efficacy is the belief that the faculty can make a positive difference in student learning; teachers believe in themselves. Faculty trust in students and parents is the belief that teachers, parents, and students can cooperate to improve learning, that is, the faculty believes in its students. Academic emphasis is the enacted behavior prompted by these beliefs, that is, the focus is student success. Thus, a school with high academic optimism is a collectivity in which the faculty believes that *it can* make a difference, that *students can* learn, and academic performance *can be* achieved (p. 145).

Another attraction to the term, academic optimism, is the idea that it can be learned; a pessimistic school can become optimistic. Academic optimism gains its name from the conviction that its composite properties all express optimism and are malleable. Administrators and teachers have reason to be optimistic. They can be empowered; neither they nor their students are irretrievably trapped by socioeconomic factors.

Some Hypotheses

In the empirical phase of this investigation, we will test two hypotheses. The first replicates the original finding that the collective properties of academic emphasis, efficacy, and faculty trust are the composite elements of academic optimism (Hoy, et al., 2006). Therefore, we hypothesize:

> H1: Academic emphasis, collective efficacy, and faculty trust in parents and students form a general latent construct called academic optimism.

The second hypothesis goes beyond the original work done by Hoy and his colleagues (2006). To extend previous work, we propose a test of the academic optimism-achievement relationship with the following hypothesis:

> H2. Student academic achievement is a function of academic optimism, controlling for socioeconomic status, urbanicity, and previous student achievement.

We expected that SES and previous achievement were directly related to both academic optimism and student achievement, and that both made indirect contributions to achievement through academic optimism. Hence, we hypothesized that:

H3: SES and previous student achievement make direct contributions, and indirect contributions through academic optimism, to student achievement.

All three of these hypotheses are described in our path model in figure 2.

Method

To test the theoretical model, we describe the sample, measures, data collection procedures, and analysis.

Sample

The sample consisted of 96 high schools in a mid-western state. Although the sample was not a random one, care was taken to select urban, suburban, and rural schools to represent a diverse set of schools from the state. Only schools with 15 or more faculty members were considered for selection into the sample. While 149 schools were contacted and invited to participate, only 97 (65%) agreed to participate and one of those schools was later excluded because we were unable to get the required achievement data. High schools in this study included both grades 9-12 and 10-12 configurations. The schools in the current sample represented a large range of SES. Data from the state department of education suggest that the sample of high schools was representative of the population in terms of both SES and urban-suburban-rural balance.

Data Collection

Data were collected from faculty members at regularly scheduled faculty meetings. A random set of teachers attending these meetings in each school was selected to respond to measures of academic emphasis, collective efficacy, and faculty trust in parents and students. Researchers administered a battery of scales to all teachers

attending the meeting. Participants were guaranteed anonymity and confidentially, and no attempt was made to collect data from the few teachers who missed the faculty meeting. Data were also collected from the state department of education on the socioeconomic status of the school and student achievement in mathematics, science, reading, social studies, and writing. Because our analysis was conducted at the school level, achievement in each content area was measured as the proportion of students in each school who passed mandatory content assessments: these data were available from the state and represent school-level variables. In addition, we were able to obtain the prior average achievement in these same content areas for 9th grade students.

Measures

The three main variables of this study were academic emphasis of schools, collective efficacy, and faculty trust in students and parents. Each was assessed by a valid and reliable measure.

Academic emphasis. The academic emphasis of a school is the extent to which the school focuses on intellectual activity and student achievement. The faculty presses students for high achievement and students work hard, are cooperative, and respect others who get high grades. The academic emphasis subscale of the Organizational Health Inventory (Hoy & Miskel, 2005; Hoy, Tarter, & Kottkamp, 1991; Hoy & Tarter, 1997) was used to tap the academic emphasis of the school. Previous research has demonstrated the reliability and construct validity of the subscale. The measure is comprised of eight Likert items scored on a 4-point scale from rarely occurs (1) to very frequently occurs (4). Sample items include, “Students respect others who get good grades,” “Students in this school can achieve the goals that have been set for them,” “The

school sets high standards for academic performance," and "Academic achievement is recognized and acknowledged by the school." The reliability of the scale in this study was supported with an alpha coefficient of .83. The construct and predictive validities of the scale also have been supported (Hoy & Tarter, 1997).

Collective efficacy. Perceived collective efficacy of a school is the judgment of the teachers that the faculty as a whole can organize and execute actions required to have a positive effect on students (Goddard, Hoy, & Woolfolk Hoy, 2000, 2004). The construct was measured using the short version of the 12-item collective efficacy scale (Goddard, Hoy, & Woolfolk Hoy, 2000). The items were scored on a 6-point Likert scale from strongly disagree (1) to strongly agree (6). Sample items included, "Teachers here are confident they will be able to motivate their students," "Drug and alcohol abuse in the community make learning difficult for students here (score reversed)," "These students come to school ready to learn," " Students here just aren't motivated to learn (score reversed)." Previous research has demonstrated the construct validity and reliability of the scale (Goddard, Hoy, & Woolfolk Hoy, 2000; 2004). The reliability of the subscale for the current sample was alpha = .91.

Faculty trust in students and parents. Faculty trust in students and parents was measured by the Omnibus Trust Scale (Hoy & Tschannen-Moran, 2003). The items were scored on a 6-point Likert scale from strongly disagree (1) to strongly agree (6). Sample items of the scale included, "Teachers in this school can trust their students," "Parents in this school are reliable in their commitment," "Students in this school can be counted on to do their work," and "Teachers can count on parental support." The reliability and construct validity of the scale have been supported in several factor-analytic studies (Hoy

& Tschannen-Moran, 2003). The alpha coefficient of reliability for the items in this study was .94.

Socioeconomic status (SES). SES is a standardized measure (mean=0 and sd=1) maintained by the state, which is a composite variable using common indicators such as income, educational levels, and residential stability characterizing the neighborhood.

Urbanicity. Urbanicity is a standardized variable created by the state that uses population density to distinguish urban schools, which have higher scores.

Achievement. Measures of the proportion of students who passed the state mandated 12th grade mathematics, science, reading, social studies, and writing tests were obtained from the state department of education. These measures served as the outcome variables in our structural equation models. Students completed the 12th grade assessments approximately one to two months after the faculties completed our survey.

Prior achievement. To control for prior school achievement levels, we were able to obtain the average 9th grade assessments two years before the current study. Although the students were not tracked longitudinally, the prior achievement scores provide reasonable estimates of the students' prior achievement.

Analysis

First, we calculated the descriptive statistics for each of the variables in the study (see Table 1). Although many studies of school effectiveness often use hierarchical methods to account for the nested nature of students in classrooms that are located within schools, neither student nor teacher level outcome data could be obtained. For this reason, and because our hypothesized model involved several complicated structural relations,

we selected structural equation modeling as our primary analytic tool. As we describe next, however, we did use hierarchical linear modeling to demonstrate that our aggregated measures of faculty trust in parents and students, academic emphasis, and collective efficacy were collective properties and not merely averages of individual measures. Two points are relevant in this regard. First, the items were written to refer to the school properties and not to individual characteristics (e. g., "Teachers in this school can trust their students"). Second, intraclass correlation coefficients of the measures show there was a substantial group effect for each of the three variables.

Intraclass correlation. To demonstrate this latter point, we analyzed the data using a fully unconditional analysis of variance for the three variables that defined academic optimism using HLM 5.4 software (Raudenbush & Bryk, 2002). The results of the intraclass correlation coefficients were .23 for collective efficacy, .21 for trust in parents and students, and .24 for academic emphasis. In other words, of the variance in perceived collective efficacy, 23% existed between schools; of the variance for trust in parents and students, 21% existed between schools; and of the variance for academic emphasis, 24% existed between schools. Thus in all cases, according to standards adopted by other researchers (Caprara et al., 2003; Hox, 2002; Stevens, 1990), the intraclass correlation coefficients were sufficiently strong to suggest a relatively high grouping effect. Further, this relatively high percentage of between–school variance suggests that academic optimism can be conceived as an important latent school property, which can be attributed to the school.

Insert Table 1 about here

Structural equation model. We tested our hypotheses using structural equation modeling. The first hypothesis was tested using the measurement part of our model.

> H1: Academic emphasis, collective efficacy, and faculty trust in parents and students form a general latent construct called academic optimism.

Because our objective in this inquiry was to test the underlying theory of a new construct that we are calling academic optimism, we assessed our theory by doing a first-order factor analysis using LISREL 8.5. The theoretical analysis discussed earlier led us to hypothesize that the three concepts of collective efficacy, faculty trust in students and parents, and academic emphasis would identify the first-order factor called academic optimism.

The structural model tested the next two hypotheses of this study.

> H2. Student academic achievement is a function of academic optimism, controlling for socioeconomic status, urbanicity, and previous student achievement.

> H3: SES and previous student achievement make direct contributions, and indirect contributions through academic optimism, to student achievement.

Thus using the structural equation model we estimated direct and indirect effects simultaneously. Further, each path coefficient was estimated after the effects of all the other paths had been taken into account.

Both the measurement and structural models are shown pictorially in a path model in Figure 2. We used LISREL 8.5 to simultaneously create the latent variable of

academic optimism using confirmatory factor analysis and then generated estimates of the relationships among the theoretical variables using path analysis.

Insert Figure 2 about here

Many statistics for goodness of fit are used to determine the acceptance or rejection of a theoretical model. First, we calculated a Chi-Square test; a non-significant chi-square means that the hypothesized model was not rejected and, in fact, is supported. The chi-square statistic, however, is strongly influenced by sample size (Bentler & Bonnett, 1980; Thompson, 2004). To complement the chi-square test, we also computed the norm-fit index (NFI), the comparative-fit-index (CFI), and the mean-root-square of approximation (RMSEA).

Results

The analyses were computed from the raw data collected as described in the methods above. The data were used as input to LISREL 8.5 (Joreskog & Sorbom, 1993). We tested the model twice. First, student achievement was considered as a latent dependent variable composed of mathematics and science achievement, and then as a latent dependent variable comprised of social studies, reading, and writing. Our model was supported in both analyses.

The test of the model for mathematics and science achievement indicated an excellent fit to the data: Chi-square = 26.15, p = 0.16, NFI = .97, CFI = .99, RMSEA = .05. The standardized solution is depicted in figure 3. Overall, the predictor variables accounted for 67% of the variance in student achievement. As hypothesized, SES was related to student achievement (.20) directly and indirectly through academic optimism

(.19). Likewise, prior achievement was related to student achievement (.60) and indirectly through academic optimism (.61). Finally as predicted, academic optimism was directly related to achievement (.21).

The test of the model for reading, social studies, and writing achievement also indicated a strong fit to the data: Chi-square = 47.71, p = .11, NFI = .96, CFI= .99, RMSEA = .04. The standardized solution is depicted in figure 4. Overall, the predictor variables accounted for 54% of the variance in student achievement. As hypothesized, SES was related to student achievement (.23) directly and indirectly through academic optimism (.23). Likewise, prior achievement was related to student achievement (.44) and indirectly through academic optimism (.52). Finally as predicted, academic optimism was directly related to achievement (.27). In brief, the proposed theoretical model was supported in both tests.

Insert Figure 3 and 4 about here

Discussion and Conclusions

We turn to a discussion of our results, implications for practice, and ideas for future research.

Academic Optimism and School Achievement

The results of our measurement model support our theory that the properties of academic emphasis, collective efficacy, and faculty trust in students and parents work together in a unifying fashion to form a general latent construct called academic optimism. This finding is consistent with our earlier work in elementary schools (Hoy, Tarter, & Woolfolk Hoy, 2006). Recall that collective efficacy is the cognitive aspect of

academic optimism, the thinking and believing side; faculty trust in students and parents is the affective and emotional side of the latent construct; and, academic emphasis is the behavioral side, that is, the enactment of the cognitive and affective into action.

The traditional view of achievement in schools is that success is a function of talent and motivation; the talented and motivated are high achievers. Seligman (1998) offers a third factor of success—optimism. He argues that optimism matters as much as talent or motivation in achievement. Further, optimism can be learned and developed. Clearly, learned optimism is an individual variable (Seligman, 1998), and academic optimism is a collective property. Nonetheless, we anticipate that many of the conclusions about individual learned optimism can be applied to the collective.

Seligman argues that learned optimism gets people over the wall of learned pessimism and not just as individuals but also as organizational members. In the same way that individuals can develop learned helplessness, organizations can be seduced by pervasive pessimism. The pessimistic view says, with a tired resignation, "These kids can't learn, and there is nothing I can do about it, so why worry about academic achievement?" This view is reinforcing, self-fulfilling, and defeating. Academic optimism, in stark contrast, views teachers as capable, students as willing, parents as supportive, and the task as achievable.

The results of our structural model support Seligman's argument that optimism is a strong force for achievement even at the organizational level. In our conception of academic optimism, the three underlying elements suggest why it is effective in enhancing learning. Collective efficacy provides the teachers' confidence that they can be effective working with students regardless of the difficulties. It motivates teachers to act

to achieve challenging goals and persist until they are successful (Goddard, Hoy, & Woolfolk Hoy, 2000; Hoy, Smith, & Sweetland, 2002). Trust in parents and teachers liberates teachers to innovate without fear of retribution if things do not go as planned, and it encourages cooperation and support between parents and teachers (Bryk & Schneider, 2002; Goddard, Tschannen-Moran, & Hoy, 2001). A focus on academics is enacted in behavior because students and parents trust the teachers. Both accept the means to realize academic performance. Not only do teachers and parents push for academic success, but students also come to value working hard, getting good grades, and achieving. In the end, efficacy, trust, and academic emphasis produce a powerful synergism that motivates, creates optimism, and channels behavior toward the accomplishment of high academic goals.

In sum, we have demonstrated that academic emphasis, faculty trust, and collective efficacy form a general latent construct, which we call academic optimism. The construct draws on three different theories. Collective efficacy comes from Bandura's work (1997) in social cognitive theory; trust emerges as an important concept in Coleman's (1990) analysis of social interaction; academic emphasis evolves from Hoy and his colleagues' research on the organizational health of schools with its theoretical underpinnings from Parsons and his colleagues (1953). Bringing these three streams of theory and research together gives a richer and yet more direct explanation of how schools enhance student learning. Further, knowing the composite elements of collective academic optimism has the added benefit of providing a wider set of possibilities for improving optimism in the school.

Implications for Practice

How can leaders build the academic optimism in their schools? We suspect the general way to enhance the academic optimism of a school is to improve its component parts. Thus we briefly consider strategies for developing academic emphasis, collective efficacy, and trust and then look to the literature on optimism for additional ideas.

Academic emphasis. The one goal that virtually everyone shares for schools is academic achievement of students. The reform and accountability movements have promoted a press toward the academic achievement of all students (No Child Left Behind). The focus of schooling is clear—it is an academic one. A push for academic achievement, however, in an environment where teachers do not feel efficacious is a recipe for frustration and stress. The challenge is to create school conditions in which teachers believe *they are up to the task and so are their students.* How might this be done? Principals move a school by example. They celebrate the achievements of students and faculty, especially the academic ones. An emphasis on the honor roll, national honor societies, and exemplary student work of all kinds are examples of behaviors that foster academics. To be sure, this is an old list, but in conjunction with building efficacy and trust, these activities take on new strength.

*Collective efficacy***.** Collective efficacy is grounded in Bandura's social cognitive theory (Bandura, 1997); hence, we turn to his sources of efficacy for ideas about how to build collective efficacy in schools. The sources of self-efficacy are mastery experiences, vicarious experiences, social persuasion, and affective states, each of which conveys information that influences teacher perceptions about the school (Bandura, 1993, 1997; Goddard, Hoy, & Woolfolk Hoy, 2004; Pajares, 1997). For example, let's consider a

school with a poor graduation rate. A neighboring district has implemented a successful program for at-risk students. The principal is in the position to orchestrate the transfer of the neighbor's success to his or her school. In so doing, the school is engaged in a self-regulatory process informed by the vicarious learning of its members and, perhaps, the social persuasion of leaders. Modeling success and persuading teachers to believe in themselves and their capabilities is a reasonable route to improve collective efficacy and enhance academic optimism (Bandura, 1997; Goddard, Hoy, & Woolfolk Hoy, 2004).

Trust in parents and students. There is some research on family and community involvement in schools (cf., Epstein, 1989); however, there is little systematic research on how to build authentic trust. Faculty trust in students and parents can be promoted through useful interchanges, both formal and informal, between parents and teachers. Making the most of vicarious learning, for example, a school can respond to a lack of trust and community participation in school activities by emulating the practices and procedures of magnet schools known for their parental cooperation and involvement. But much more research is needed about what programs and factors support the development of teachers' trust in parents and students. Such examples demonstrate how changes in social perceptions influence what actions organizations choose to pursue. Collective perceptions about efficacy, academic emphasis, and trust shape the school's norms and can be developed through experiences that convey their value.

A caveat is in order: interventions should be supportive of all three aspects of optimism. For example, some ways of enhancing academic emphasis, such as more competitive grading and greater punishment for failure, could undermine the development of trust among teachers, students, and parents. Similarly, a focus on

developing trust could come as a result of diminishing standards and rewarding students for merely adequate work, that is, providing only positive feedback. Constructive criticism is essential for academic growth.

Optimism. The research on individual optimism suggests some ideas about encouraging a culture of optimism in schools. Peterson (2000) found that optimism is thwarted by stress; so decreasing stress should support optimism. Teachers can lower their stress by increasing their agency through appropriate participation in decisions that affect their school lives (Hoy & Tarter, 2004).

People learn from models because the observation of successful performance in others promotes an acquisition of their beliefs and actions. The most effective models are those who seem competent, powerful, prestigious, and similar to the observer (Pintrich & Schunk, 2002). Vicarious and observational learning are sources of optimism. Thus teachers can serve as models for each other. The way school problems are discussed should convey the possibilities for resolution rather defeatism. Novice teachers, for example, should hear optimistic approaches to teaching rather than a sense of passive helplessness in teachers' lounges and school hallways.

Snyder and his colleagues (Snyder, Cheavens, & Sympson, 1997; Snyder et al., 2002) have studied *hope,* a concept that combines *pathways thinking* (there are multiple ways to reach our goals) with *agentic thinking* (we have the capabilities to reach these goals— changing if necessary). Individuals who are high on measures of hope often collaborate to achieve shared goals. They enjoy interpersonal interactions: "high-hopers serve to make the group not only more productive but also, perhaps equally important, an interpersonally more enjoyable arena" (Snyder, Cheavens, & Sympson, 1997, p. 115).

Thus leaders with high hopes are likely to encourage and build academic optimism in their schools.

Future Research

This inquiry is a modest beginning; much remains to be done. Our analysis is a promising clarification of the linkages within schools that influence student achievement. Although our data are drawn from high schools, we believe the findings are applicable to elementary and middle schools because the three elements of academic optimism have explained learning in those settings as well.

One might question whether academic optimism adds any value to the earlier research on effective schools (Purkey & Smith, 1983; Scheerens & Bosker, 1997), which identified such factors as clear goals and high expectations, parental support and involvement, and collaborative planning as being related to student achievement. Clearly our findings about academic optimism are consistent with this earlier research, but go further to explain how some of these factors influence teachers' beliefs that lead to student achievement. Parental involvement will not support achievement unless the involvement builds trusts among students, teachers, and parents. Collaborative planning may be effective because it builds a sense of collective efficacy that promotes teacher motivation and persistence. Academic emphasis has consistently been related to achievement, but in the context of pressure and punishment such emphasis may be deleterious to long-term learning. Students, parents, and teachers will likely be more willing to work toward academically challenging goals if they believe they are capable and the people around them can be trusted to help them. These are all testable propositions in need of further empirical support.

Clearly, more research in a variety of school settings is necessary to build a comprehensive theory of academic optimism in schools. For example, in the tradition of the earlier effective schools research, qualitative investigators could do comparative case studies of schools identified as having high and low academic optimism. What would these schools look, sound, and feel like? Are there curricular differences between such schools? What are the experiences of students, teachers, and parents? How are expectations communicated and enforced? How does teacher trust in parents emerge? What enables and hinders the development of such trust? What is the role of the principal in developing a culture of academic optimism? Are leader optimism and hope necessary conditions for the creation of academic optimism? Based on rich descriptions of life in schools, variables could then be identified for further quantitative analyses. It seems obvious to us that both quantitative and qualitative work are necessary to elaborate a theory of academic optimism in schools.

Academic optimism is especially attractive because it emphasizes the potential of schools to overcome the power of socioeconomic factors that impair student achievement. It is a social-psychological construct that is in part related to the positive psychology of Seligman and Csikszentmihalyi (2000), the social cognitive theory of Bandura (1997), Hoy and Tarter's (1997) research on school climate, and the social theory of Coleman (1990). There is a real value in focusing on potential with its strength and resilience rather than pathology with its weakness and helplessness. Academic optimism attempts to explain and nurture what is best in schools to facilitate student learning. This simple conclusion should encourage teachers and principals to move forward with confidence.

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Author Note

Wayne K. Hoy and Anita Woolfolk Hoy, School of Educational Policy and Leadership, College of Education, The Ohio State University; C. John Tarter, School of Education, St. John's University.

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Correspondence should be addressed to Wayne K. Hoy, School of Educational Policy and Leadership, Ramseyer 116, 29 West Woodruff Ave., The Ohio State University, Columbus, Ohio 43210. E-mail: hoy.16@osu.edu.

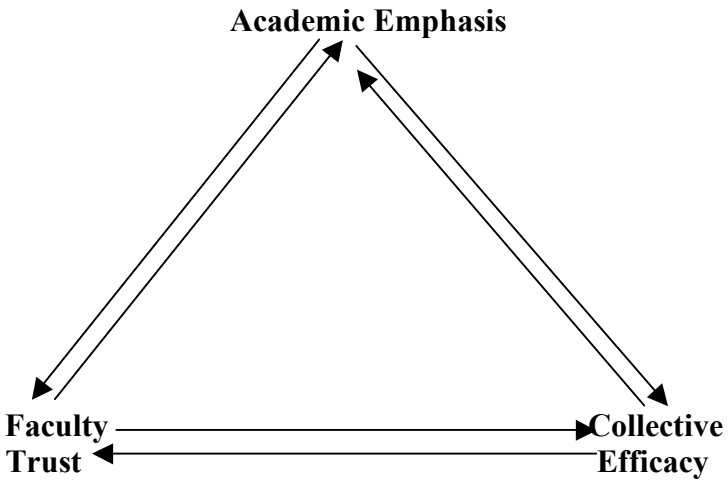
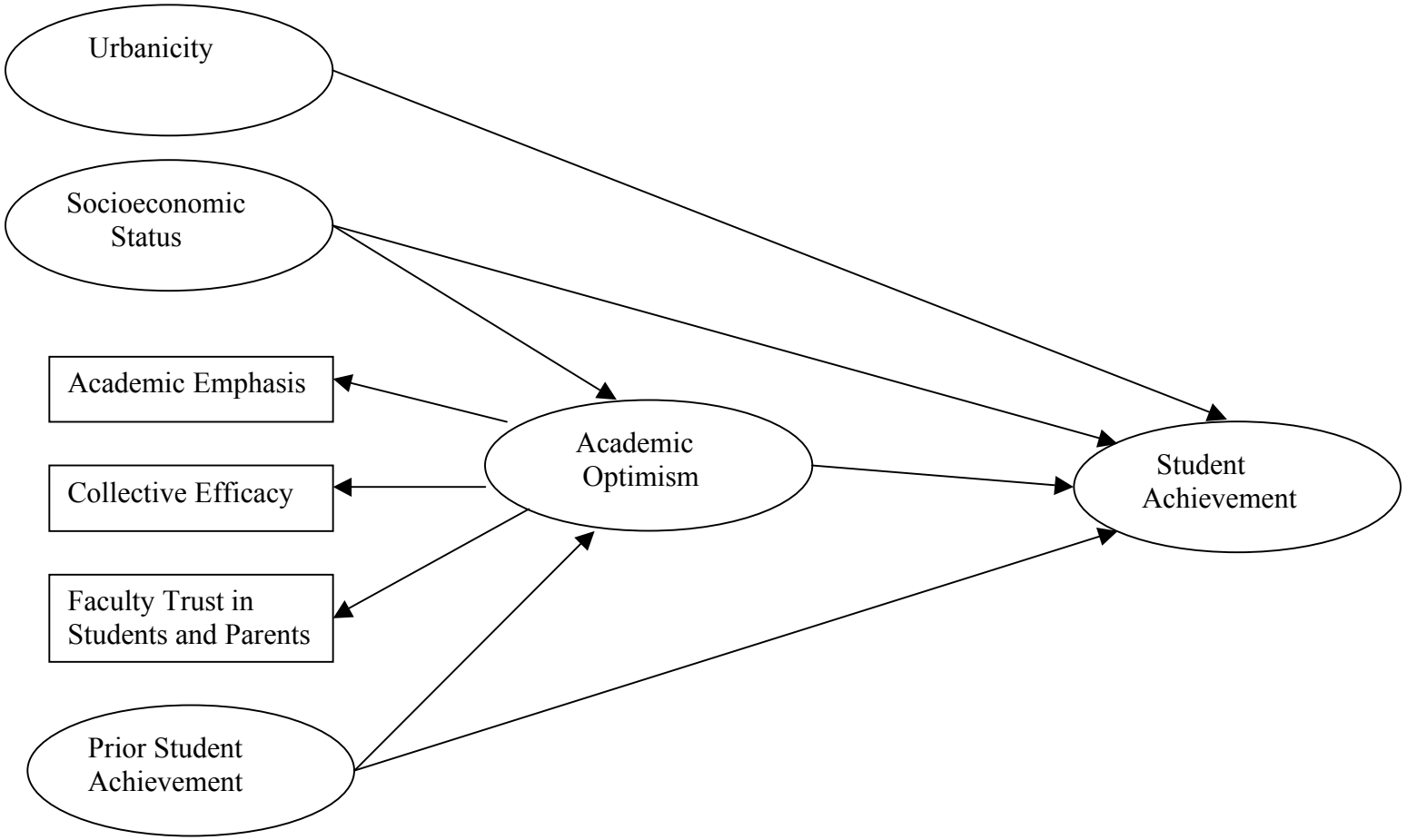


Figure 1 The Relationships in Reciprocal Causality with Each Other

Table 1. Description of variables (N = 96 Schools).

Variable	M	SD	Min	Max
Academic Emphasis	2.75	.26	2.21	3.38
Collective Efficacy	3.96	.33	3.23	4.85
Trust in Clients	3.65	.39	2.79	4.72
Socioeconomic Status	-0.04	.88	-1.21	3.59
Urbanicity	-0.04	0.96	-2.07	2.09
9th Grade Reading Achievement	90.19	8.17	50.00	100.00
9th Grade Social Studies Achievement	81.39	13.42	12.50	100.00
9th Grade Writing Achievement	90.59	9.86	25.00	100.00
9th Grade Match Achievement	71.35	15.83	22.20	98.70
9th Grade Science Achievement	75.31	5.83	11.10	100.00
12th Grade Reading Achievement	64.45	11.07	26.40	85.30
12th Grade Social Studies Achievement	66.64	13.07	23.80	88.90
12th Grade Writing Achievement	82.37	10.06	53.60	100.00
12 Grade Math Achievement	57.47	15.07	20.80`	90.40
12th Grade Science Achievement	59.97	13.82	15.10	87.70

Note: Achievement scores represent the proportion of students who passed the assessment.


Urbanicity
Socioeconomic Status
Academic Emphasis
Collective Efficacy
Faculty Trust in Students and Parents
Prior Student Achievement
Academic Optimism
Student Achievement

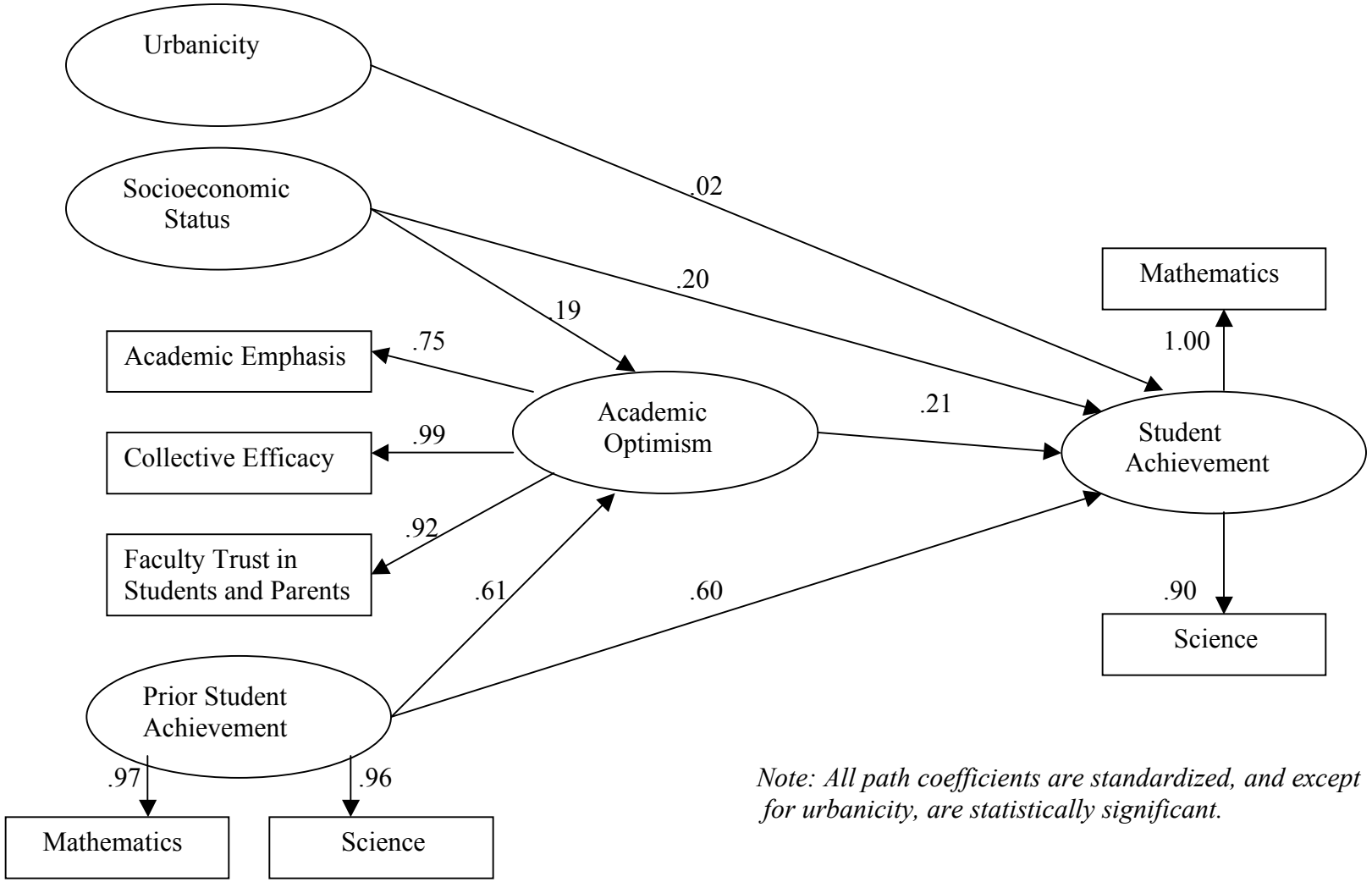


Figure 3 Mathematics and Science Test of the Theoretical Model of Academic Optimism and School Achievement

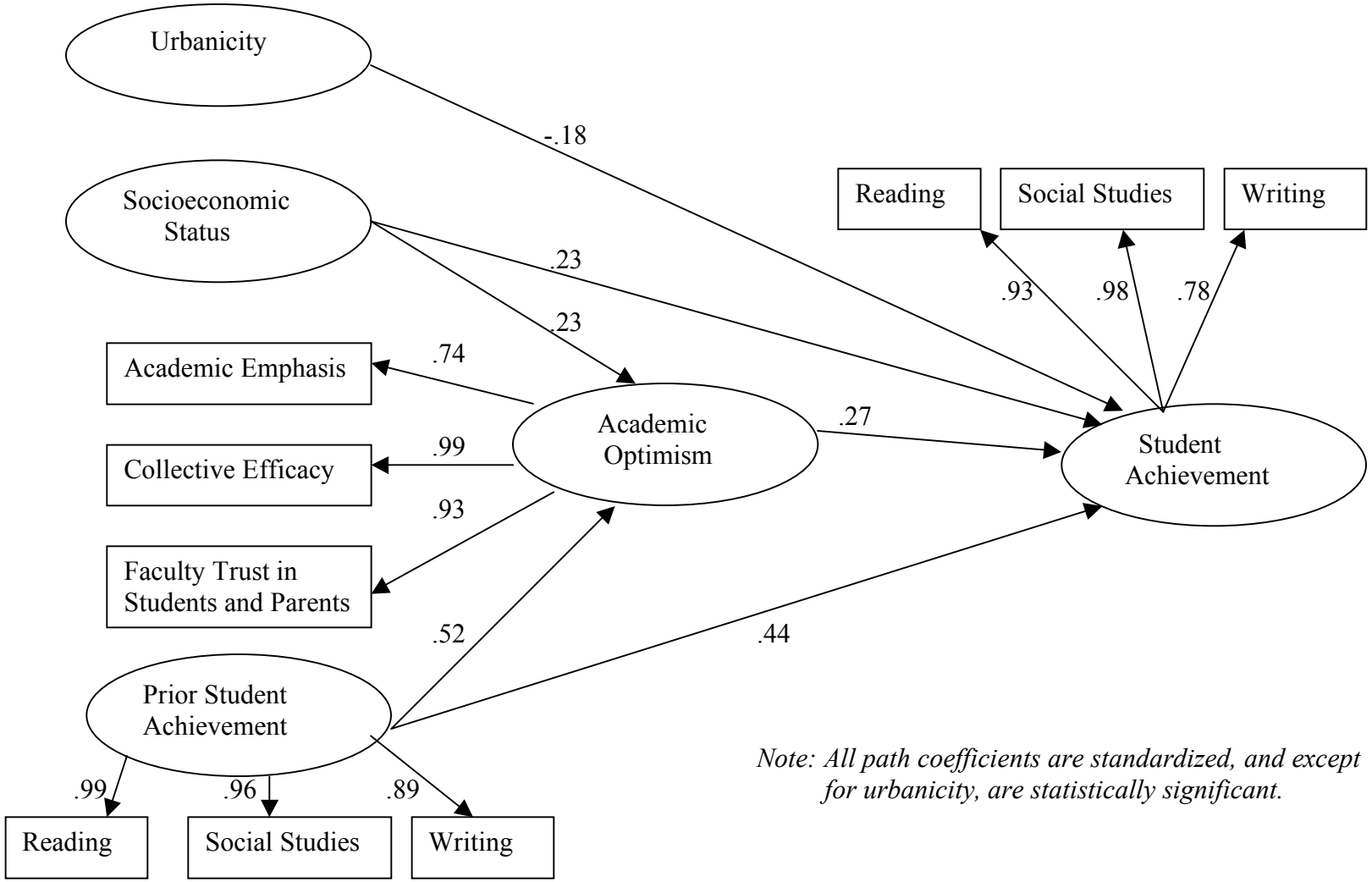


Figure 3 Reading, Social Studies, and Writing Test of the Theoretical Model of Academic Optimism and School Achievement