

Article

# A Path Analysis of the Effects of Principal Professional Orientation towards Leadership, Professional Teacher Behavior, and School Academic Optimism on School Reading Achievement

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**Abstract:** This study tested the effects of the principal's professional orientation towards leadership/enabling school structure (ESS) on two mediating variables, school academic optimism (SAO) and professional teacher behavior (PTB), on the outcome variable school reading achievement (RA). Data were drawn from a sample of 54 schools (including 45 elementary schools and nine middle schools); the school was the unit of analysis. Data analysis supported a path to RA in which a structural variable, ESS was the immediate antecedent of SAO and PTB. Two control variables, school level and SES, were included in the model. SES had a significant effect on SAO but not on PTB. School level had a negative effect on both PTB and SAO suggesting that both variables were higher in elementary school and declined in middle school. SES paired with SAO in predicting RA. As expected, SAO had a greater effect on RA than SES. The significance of the findings lies in the confirmation of SAO as an important influence on RA and in demonstrating the importance of ESS in establishing a context in which AO and PTB can flourish.

**Keywords:** academic optimism; professional teacher behavior; enabling school structure; school culture; academic achievement

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## 1. Introduction, Conceptual Framework, Theoretical Rationale and Hypothesis

Academic optimism is an emerging concept in the literature on effective schools [1–9]. The driving idea behind this perspective is that collective efficacy, faculty trust in students and parents, and academic emphasis combine into a unitary element of school culture predicting achievement. The research linking antecedent variables to academic optimism and achievement has been promising; Kirby and DiPaola [10] found connections from community engagement to academic optimism and thence to achievement. Wu, Tarter, and Hoy [9] and Mitchell, Mendiola, Schumacker, and Lowery [7] found a connection between enabling school structure and academic optimism. Hoy and Miskel [2] suggested a need for further investigations into both the antecedents and correlates of academic optimism. The purpose of this paper is to analyze elements in the school that could likely support the development and be correlated with academic optimism and together can effect achievement.

### 1.1. Conceptual Framework

*School Academic optimism* (SAO) is not dispositional optimism or a belief that things will get better. Rather, it is a construct that brings together three powerful streams of research from empirical studies

on efficacy, trust, and climate in a combination that argues the school is not simply a pawn of SES. The school can make contributions to student success independently of the SES of the school and the prior achievement of students [3,4]. This line of research stems from Bandura's [11] work on collective efficacy, Seligman's [12] work on positive psychology, and decades of work by Hoy and colleagues on school climate and culture. Noting that over the past three decades empirical studies had demonstrated consistently that collective efficacy, faculty trust in clients and academic emphasis were predictive of achievement individually [13–15], Hoy, Tarter, and Woolfolk Hoy [3] posited that these variables would come together to create a culture of optimism that would over power the negative effects of socio-economic status and other demographic variables on achievement. Several studies have confirmed that these three variables do indeed come together to create the general latent construct that they referred to as SAO and that SAO is predictive of student achievement [1,3–10].

The essence of the concept is that three school properties; collective efficacy, faculty trust in clients, and academic emphasis work together to foster a culture of school success. Collective efficacy research grew out of the research on individual teacher efficacy [13–15]. It is a cognitive dimension of the faculty that describes the faculty's belief that they can collectively have a positive impact on student outcomes. Unlike individual teacher efficacy it is a school property. Teachers in schools with a high sense of collective efficacy will persist in the face of obstacles in striving to meet student needs and instructional goals. Faculty trust in students and parents grew out of research on trust in schools [16]. It is an affective dimension that refers to the faculty's beliefs that they can trust and collaborate with students and parents to bring about positive results for students. Teachers who believe they can trust students and parents will be more inclined to include them in matters that are related to instruction and learning [17]. Of the three types of faculty trust (faculty trust in the principal, faculty trust in colleagues, and faculty trust in students and parents) it is the factor most closely associated with student achievement. Academic emphasis refers to the school's emphasis on achieving high standards and the expectation that all students can succeed [18–20]. It is the behavioral dimension of a culture of academic optimism. In schools with high academic emphasis teachers and administrators believe that students are capable of learning, they press students to achieve academically, they persist in helping struggling students, and they reward academic accomplishments. Hoy and Tarter found academic emphasis to be the primary contributor to the health of the school.

Earlier research has given some demonstration to the notion that organizational properties of the school will contribute to the quality of the school [21,22]. Extending that research to look for antecedents and correlates of academic optimism prompts an exploration into the facilitating quality of the structure of the school, the professional behavior of teachers, and the socioeconomic status of the students. The theory anticipating positive relationships of these concepts to academic optimism arises from a theory of congruence, that is, the greater the degree of mutual support among elements of a system, the more effective the system [2,23].

*Enabling School Structure* (ESS) is the conceptual description of the school's rules, regulations, and decision-making properties [24]. Schools are seen to have rules in the formal organization that hinder or facilitate the work of the teachers. Enabling structure emphatically does not argue for more or less bureaucratic intensity; instead, it makes a case for functional and dysfunctional bureaucratic arrangements. A functional bureaucratic arrangement would be one where rules and regulations are flexible and the authority structure is perceived as being collaborative. In such a structure, teachers' opinions are valued particularly in areas that involve instruction. A dysfunctional bureaucratic arrangement is one where rules are strictly adhered to, the authority structure is autocratic, and teachers are made to feel as though their input is not valued. Only three studies have explored the effects of ESS on AO. One study explored this relationship in elementary schools in the U.S. [4], one study examined this relationship in elementary schools in Taiwan [9], and one study was conducted in elementary and middle schools in the U.S. [7]. While the study of this relationship is in its infancy the results are promising, all three studies found that ESS had a significant effect on SAO which in turn had a significant effect on measures of school achievement. To our knowledge only one study to date

has explored the relationship between ESS and professional teacher behavior (PTB) but no study has explored the relationship between SAO and PTB. Other research findings report that ESS is correlated with faculty trust in the principal, decreased truth spinning, decreased role conflict [25], and increased parent trust in the principal and the school [26], and Mitchell and Tarter [21] Tarter and Hoy [22] found ESS to be predictive of teachers' overall perception of quality and school effectiveness.

*Professional Orientation versus Bureaucratic Orientation.* Tschannen-Moran [27] argued that while the structure of the school can be conceptualized as a school property, it results from the principal's orientation towards leadership. She further argued that the Enabling School Structure Scale actually measures teachers' perceptions regarding the principal's orientation towards leadership. A principal's orientation towards leadership is seen as existing on a continuum and points to the principal's leadership style and behavior. At the extremes a principal can either have a professional orientation or a bureaucratic orientation towards leadership. She posited that enabling school structures are created because of the principal's professional orientation towards leadership. Principals who have a professional orientation towards leadership tend to move away from reliance upon bureaucratic structures such as authority, rules, regulations, policies, procedures, and job specialization towards a more professional leadership orientation grounded in trust that relies on building relationships with teachers and promotes professional teacher behavior. Teachers are viewed as colleagues who are capable of meeting the needs of students. The role then of the principal is to support teachers' efforts. On the other hand when a principal has a bureaucratic orientation towards leadership this will result in reliance upon establishing an "authoritarian culture of control with constrained communication, micromanagement, a proliferation of rules, and a rigid response to external threats (p. 221)". Inherent in a bureaucratic orientation towards leadership is a lack of trust towards teachers. Teachers are not viewed as professionals or as colleagues. They require strict management in order to bring about positive results for students. This fits well within Hoy and Sweetland's [24] conceptualization regarding structure being either enabling or hindering. Principals with a professional orientation towards leadership establish enabling structures whereas principals with a bureaucratic orientation are more prone to establish hindering structures. In a study of 80 middle schools in a Mid-Atlantic state in the U.S.A. Tschannen-Moran found that principal professional orientation toward leadership was positively correlated with and predictive of teacher professional behavior. Principal professional orientation was also correlated with faculty trust in the principal, faculty trust in colleagues, and faculty trust in clients.

*Professional Teacher Behavior (PTB)* is the teachers' seriousness about their work as well as their commitment to students and each other. Professional teacher behavior is a composite of teacher behaviors captured by two climate measures (the Organizational Description Questionnaire—OCDQ and the Organizational Health Inventory—OHI). Two metaphors for school climate are the health of school and the openness of the school. The health of the school captures the positive relationships within the school and the openness in the school captures the personality of the school on a continuum from open to closed [14]. The OCDQ was designed to measure the openness of the school and the OHI was designed to capture the health of the school. A second order factor analysis by Hoy and Sabo [28] of both measures produced four factors, one of which was a factor that captured teacher relationships with each other that included four dimensions; teacher commitment, teacher collegiality, teacher affiliation, teacher disengagement. They named this factor teacher professionalism and defined it as teacher behavior characterized by commitment to students, respect for the competence of colleagues, warm friendly interactions, and engagement in the teaching task. Teacher commitment refers to teachers' seriousness about their work, affiliation refers to teachers' enthusiasm for their work and whether they like one another, collegiality refers to whether teachers treat each other as professional colleagues and their willingness to collaborate with each other. Teacher disengagement was a negative factor which referred to teachers' involvement or lack thereof with the teaching task and with one another. Teachers who are engaged in professional behavior show respect for the competence of their colleagues, they are collaborative and supportive, they demonstrate autonomous judgment, they are

enthusiastic about their work, and they are committed to the success of their students. Openness in teacher-teacher relationships is one of the indicators of the health of the school [28]. Not surprisingly, Hoy *et al.* found both collegial leadership of the principal and faculty trust in colleagues to be correlated with professional teacher behavior. Moreover, Hoy and Sabo [29] found professional teacher behavior to be significantly correlated with math, reading and writing achievement in a study that included 87 middle schools. Hoy and Sweetland [25] using the same sample of schools later found that teacher professionalism was significantly correlated with teacher empowerment.

*Socioeconomic Status* (SES) describes the relative placement of the school in a range of economic levels. The common measure used is the percentage of students within the school who participate in the free or reduced lunch program. This measure is not without criticism [30]. However, due to the lack of availability of other reliable measures, much of the research on schools has used this measure to quantify the schools' SES level.

### 1.2. Theoretical Rationale and Hypotheses

Because enabling school structure represents a type of leadership characterized by the principals' professional orientation towards leadership that is grounded in establishing trusting relationships with teachers we would expect that enabling school structure is related to both school academic optimism and professional teacher behavior. In fact we would argue that ESS sets the stage for the development of both SAO and PTB. Prior studies have shown a connection between SAO and achievement and between PTB and achievement [1,3–10,29]. Therefore we expect that both SAO and PTB will be directly related to a measure of reading achievement aggregated to the school. However, no study to our knowledge has explored the relationship between SAO and PTB. We also anticipate that because teacher behavior is intrinsic to optimism, we would expect a strong relationship between PTB and SAO. The theory anticipates that a significant correlation between professional teacher behavior (PTB) and academic optimism should be expected. Academic Optimism and Organizational Climate Index are composite constructs [3,29], and their respective subtests have been found to be associated with trust, efficacy, effectiveness, and teacher initiated action over the years [2,11,20,22].

While there is individual teacher optimism within a classroom, academic optimism is the property of the organizational school. It seems unlikely that academic optimism could come about in schools whose formal structure got in the way of developing efficacy, trust, and behavioral expectations, which is to say that the more enabling the structure, the greater will be the optimism. Finally, there was an assumption that SES would be related to optimism. In the original work on academic optimism [3], SES has a modest direct correlation to optimism even though academic optimism made its own independent contribution to academic achievement. One would expect that among schools with paltry resources, forging academic optimism would be challenging. Because the variables that make up academic optimism have been shown to decline in middle school and high school, we included school level as one of the control variables in our analysis [7]. Given the preceding sense of relationships between the variables and optimism, it was hypothesized that:

H1: Enabling School Structure will be correlated with and predictive of school academic optimism and professional teacher behavior, and these variables together will explain a significant portion of the variance in a measure of school achievement while controlling for school level and SES.

## 2. Methodology

### 2.1. Data Sources

The school was the unit of analysis. In the Spring Semester of 2014 seventy-seven schools in the northwestern region of a southern state in the U.S. were invited to participate in this study. The schools represented a convenience sample. Schools were selected based on convenience of access by a group of student researchers. The schools represented rural, urban, and suburban areas and were limited to those that had 15 or more faculty members. Of the 77 schools invited to participate 60 schools agreed

to participate in the study for a 78% response rate. For the purpose of this study the sample had to be limited to 54 schools because six of the schools that participated did not give the achievement tests used in this study. The sample included 45 elementary schools and nine middle schools.

## 2.2. Data Collection

Survey instruments were randomly assigned to 1665 teachers who had gathered for regularly scheduled faculty meetings at their individual schools. All teachers present at the faculty meetings participated in the data collection. One of the student researchers attended the faculty meeting and personally handed out the written surveys, explained the procedures and the purpose of the study, answered questions, and collected the surveys prior to leaving. Protocols of anonymity, confidentiality, and voluntary participation were scrupulously followed, guided by University Institutional Review Board procedures as well as formal IRB protections in many of the districts that participated in the study.

## 2.3. Instruments

*Enabling School Structure (Professional Orientation Towards Leadership)*, [25] was measured using a 12 item Likert type scale with a response set that ranges from “never” coded as 1 to “always” coded as 5. Sample items include “The administrative hierarchy of this school enables teachers to do their job”, “In this school the authority of the principal is used to undermine teachers” (item reverse scored), and “Administrative rules in this school are guides to solutions rather than rigid procedures”. The reported reliability of this scale is 0.96 [25].

*School Academic Optimism* was measured using the 30-item Likert type *School Academic Optimism Scale* [3] which includes three subscales (*Collective Teacher Efficacy*, *Academic Emphasis*, *Faculty Trust in Clients*). Sample items include “Teachers in this school are able to get through to the most difficult students”, “Teachers in this school trust their students”, and “The school sets high standards for performance”. The reported reliability of the scales that make up the SAO scale range from 0.91 to 0.98 [3–5].

*Professional Teacher Behavior* was measured using the professional teacher behavior subscale of the Organizational Climate Index [28]. It is a 7-item, Likert type scale that includes such items as “Teachers help and support each other” and “Teachers respect the professional competence of their colleagues”. The reported reliability of this scale is 0.94 [27].

*SES* was measured using the percentage of students on free and reduced lunch. The percentage was subtracted from 1.0 so as to result in higher values being greater levels of SES, which is the common understanding of the term.

*School level* was dummy coded with 1 for elementary schools and 0 for middle schools. There were 45 elementary schools (consisting of grades K-5) and nine middle schools (consisting of grades 6–8).

*Achievement* was measured using aggregated reading scores representing the percentage of students who passed the Alabama Reading and Math Test (ARMT) per school for the 2012 school year.

## 2.4. Analytic Technique

The unit of analysis was the school, thus individual teacher scores were aggregated to the school level. Achievement scores and information regarding the percent free and reduced lunch were only available as school means, which prevented us from performing hierarchical linear modeling. *Enabling school structure*, the observed variables that make up *School Academic Optimism* (*Collective Efficacy*, *Faculty Trust in Clients* and *Academic Emphasis*) and *Professional Teacher Behavior* were conceived of as school properties. In order to justify aggregation to the school our first level of analysis involved calculation of the Intraclass Correlations for these variables (ICC). We calculated both the ICC-1 and the ICC-2. ICC-1 represents the variance attributed to group membership and ICC-2 represents within group agreement between teachers in the sample. We calculated both ICCs using a Random Effects ANOVA. We also calculated the reliabilities of the scales in our sample.

To answer our hypothesis that stated that “enabling school structure will be correlated with and predictive of school academic optimism and professional teacher behavior, and those variables together

will explain a significant portion of the variance in a measure of school achievement while controlling for school level and SES”, we chose to use a combination of correlational analysis and structural equation modeling (SEM). Correlational analysis allowed us to test the relationships of the variables in the study. We calculated the bivariate correlations for all of our variables and a measure of reading achievement aggregated to the school. Finally we conducted a path analysis using IBM SPSS AMOS Graphics 19 to test the effects of our predictor variables on our school reading achievement variable while controlling for the effects of SES and school level. The choice of SEM provided an appropriate way to test the effects of our observed predictor variable (ESS) on two mediating variables (SAO and PTB) and to test the direct effects of our mediating and control variables on a measure of school achievement. According to Shumacker and Lomax [31], “the use of simple bivariate correlations is not sufficient for examining a sophisticated theoretical model. . . the use of structural equation modeling permits complex phenomena to be statistically modeled and tested (p. 7)”. We saw no need to reconfirm that SAO is a unitary latent variable made up of collective efficacy, faculty trust in clients, and academic emphasis because this has already been demonstrated in multiple studies [1,3–10].

### 3. Results

#### 3.1. Intraclass Correlations

Our preliminary analysis which included calculating the ICCs for our variables was as follows: Five Random Effects ANOVAs using SPSS 22 to estimate the extent to which our observed variables (*Enabling School Structure*, *Professional Teacher Behavior*, *Faculty Trust in Clients*, *Collective Efficacy* and *Academic Emphasis*) varied within and between schools were calculated. The ICC-1s confirmed the nested nature of our variables. The F-tests of significance indicated that as expected the proportion of variance between schools in *Enabling School Structure* (27%), *Professional Teacher Behavior* (17%), *Academic Emphasis* (25%), *Faculty Trust in Clients* (30%), and *Collective Efficacy* (34%) were statistically significant. Significant ICC-2’s that were above the .60 threshold recommended by Cohen, Doveh, and Eick [32], for all but one of our variables indicated strong within group agreement; *Enabling School Structure* (ICC-2 = 0.87,  $p < 0.01$ ), *Professional Teacher Behavior* (ICC-2 = 0.41,  $p < 0.01$ ), *Academic Emphasis* (ICC-2 = 0.63,  $p < 0.01$ ), *Faculty Trust in Clients* (ICC-2 = 0.70,  $p < 0.01$ ), and *Collective Efficacy* (ICC-2 = 0.74,  $p < 0.01$ ). These results indicated a significant variance in teacher perception attributed to differences between schools that justified our aggregation of these variables to the school as well as strong within group agreement for all but one of our variables.

#### 3.2. Scale Reliabilities

We also calculated the Cronbach’s Alpha reliabilities of the scales used in our study. All scale reliabilities were greater than 0.70; ESS (0.92), PTB (0.91) and the scales making up the latent variable SAO (CE = 0.91, FTC = 0.92, AE = 0.87). See Table 1 for a depiction of these results.

**Table 1.** Intraclass Correlation Coefficients for Observed Variables and Scale Reliabilities.

Variable	ICC-1	ICC-2	F Ratio	Reliability
ESS	0.27	0.87	2.59 **	0.92
PTB	0.17	0.41	1.68 **	0.91
AE	0.25	0.63	2.65 **	0.87
CE	0.30	0.70	3.92 **	0.91
FTC	0.34	0.74	3.29 **	0.92

Note: \*\*  $p < 0.01$ .

### 3.3. Bivariate Correlations

Our hypothesis stated that ESS would be correlated with SAO and PTB, thus we explored the bivariate correlations of the variables in our study. ESS was positively correlated with both PTB ( $r = 0.32, p < 0.05$ ) and SAO ( $r = 0.29, p < 0.05$ ). SAO and SES were positively correlated with Reading achievement ( $r = 0.51, p < 0.01$ ) and ( $r = 0.47, p < 0.01$ ) respectively. PTB and SAO were positively correlated with each other ( $r = 0.36, p < 0.01$ ). SES was correlated with SAO ( $r = 0.48, p < 0.01$ ). Finally school level was not correlated with any of the variables in our study. However, due to its known relationship with the observed variables that make up SAO we left this in our structural model [7,33]. See Table 2 for a depiction of the correlational analysis.

**Table 2.** Bivariate Correlations.

	PTB	SAO	SES	Level	Reading
ESS	0.318 *	0.288 *	0.078	0.139	0.236
PTB	1	0.358 **	−0.088	−0.216	0.117
SAO	-	1	0.480 **	−0.149	0.504 **
SES	-	-	1	0.238	0.465 **
Level	-	-	-	1	0.140
Reading	-	-	-	-	1

$N = 54, * p < 0.05, ** p < 0.01.$

### 3.4. Structural Equation Model

Finally we used IBM SPSS AMOS Graphics 19 to create our structural equation model. Our model consisted of one exogenous predictor variable ESS that was hypothesized to have a direct effect on two endogenous mediating predictor variables (SAO and PTB), and two exogenous control variables SES and School Level. Our two endogenous mediating variables were hypothesized to have direct effects on school reading achievement. Hypothesis 1 which stated that Enabling School Structure would be correlated with and predictive of school academic optimism and professional teacher behavior, and these variables together would explain a significant portion of the variance in a measure of school achievement while controlling for school level and SES was partially supported. ESS had a significant direct effect on PTB ( $\lambda = 0.35, p < 0.01$ ) and SAO ( $\lambda = 0.28, p < 0.01$ ). While school level was not significantly correlated with any of the variables in our study in the bivariate correlational analysis, it had a significant negative effect on both of our endogenous predictor variables; PTB ( $\lambda = -0.26, p < 0.05$ ) and SAO ( $\lambda = -0.30, p < 0.01$ ). SAO had a significant direct effect on reading achievement ( $\lambda = 0.38, p < 0.01$ ). However, PTB did not have a significant effect on reading achievement as we anticipated. SES had a significant effect on both SAO ( $\lambda = 0.51, p < 0.01$ ) and reading achievement ( $\lambda = 0.29, p < 0.05$ ). Together SAO and SES explained 33% of the variance in reading achievement with SAO making the greatest contribution to the explanation.

### 3.5. Goodness-of-Fit

To test the goodness of fit, we used the chi-square test of model fit. According to Schumacker and Lomax [34] the chi-square test of model fit is the best statistical test of significance to test the theoretical model. Our model had good model fit, as evidenced by a non-significant chi-square of (13.09,  $p = 0.11$ ).

### 3.6. Power Analysis

To test the power of our model we used G\*Power 3.1. Schumacker and Lomax [31] recommended after assessing the goodness-of-fit that it is important to calculate the power of the model to reject the null hypothesis. They recommended the use of G\*Power 3.1 as a reliable source for testing the power of the model. Based on an NCP of 19.15 and 8 degrees of freedom there was a 99% chance that we

would correctly reject the null hypothesis. See Figure 1 for our final structural equation model with all significant paths remaining.

This study tested the effects of the principal's professional orientation towards leadership/enabling school structure (ESS) on two mediating variables; school academic optimism (SAO) and professional teacher behavior (PTB) on the outcome variable school reading achievement (RA). Data were drawn from a sample of 54 schools (including 45 elementary schools and nine middle schools); the school was the unit of analysis. Data analysis supported a path to RA in which a structural variable, ESS was the immediate antecedent of SAO and PTB. Two control variables, school level and SES were included in the model. SES had a significant effect on SAO but not on PTB. School level had a negative effect on both PTB and SAO suggesting that both variables were higher in elementary school and declined in middle school. SES paired with SAO in predicting RA. As expected, SAO had a greater effect on RA than SES. The significance of the findings lies in the confirmation of SAO as an important influence on RA and in demonstrating the importance of ESS in establishing a context in which AO and PTB can flourish.

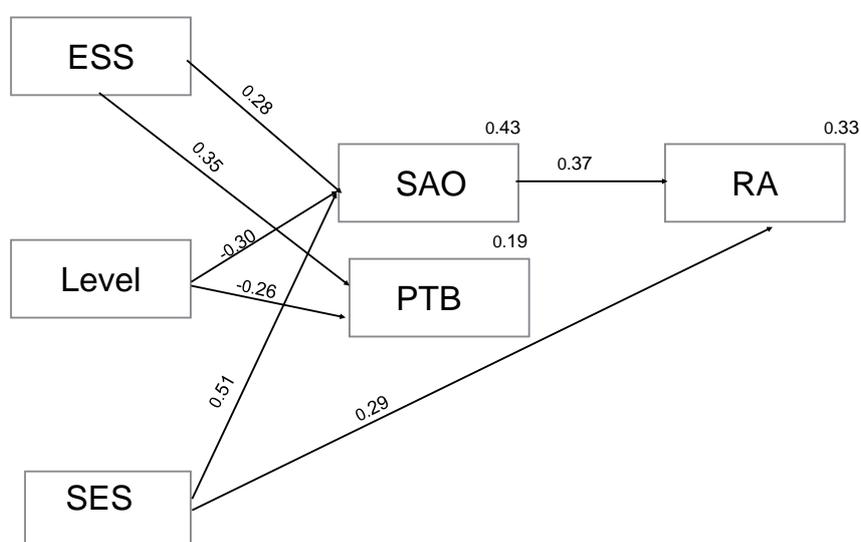


Figure 1. Final Model: ESS, SAO PTB and RA with significant paths.

#### 4. Discussion

Academic optimism is an emerging and promising construct that needs more research. There are variables that intervene in the relationship of optimism to dependent variables other than academic achievement, and those relationships should be subject to theory building and testing. The study of correlates of optimism is in large part a study of antecedents and correlates of the construct.

Moderate correlations of optimism to enabling school structure (a type of leadership that describes the principals' professional orientation towards leadership) and professional teacher behavior were anticipated. Enabling structures are characterized by two-way communication and the creation of procedures that nurture the work of teachers [24]. In the analysis at hand, the fact that enabling school structures were predictive of optimism ( $\lambda = 0.28, p < 0.01$ ) confirms other findings [4,7,9], and leads us to argue that a professional orientation towards leadership is a necessary condition for the formation of optimism. The varied nature of teacher work and the range of skills necessary preclude autocratic rule [35]. Enabling school structure describes behaviors of the principal that are supportive and allow sufficient coordination and collaboration for the teachers to contribute to the success of the organization [29]. Henry Mintzberg's [33] general sense that teachers are professional in that they have substantial control over how they teach and what actually gets taught provides a theoretical lens. The key part of the school organization is the teaching staff whose work can be enhanced by actions that support the activities of teachers. Thus, the principal who provides the organizational context for

professional work will likely find the school more successful in its professional obligations. Hattie [35] characterizes these activities as “creating a conversation” between teachers and administrators about establishing mutual goals for the school and building useful feedback mechanisms to assess progress toward the goals. Marks and Printy [36] provide some empirical support for this analysis in describing instructional leaders whose influence is found in the organizing of shared instructional responsibilities. That is, the administrator creates a context for success through, in part, the building of a working community. Such a school would stand in contrast to centralized authority and control of lower performing schools [35].

We also anticipated that enabling structure would pave the way for professional teacher behavior. This study confirmed this assumption. Enabling structure was predictive of professional teacher behavior ( $\lambda = 0.35, p < 0.01$ ) suggesting that when leaders adopt a professional orientation towards leadership they establish norms that free up teachers to engage in behaviors that are collegial, that involve collective deliberation, inquiry and professionalism [27]. A close reading of the organizational literature gives the impression that these findings are obvious. However, they are only obvious after they have been demonstrated [37]. The continuing research should look to what specific behaviors will these enabling and professionally oriented leaders exercise. Unlike findings by Hoy and Sabo [28] our study did not support the connection between professional teacher behavior and achievement.

The correlation of professional teacher behavior to school academic optimism ( $r = 0.36, p < 0.01$ ) suggests that both optimism and professional teacher behavior may require the development of professional norms of practice. Hattie [35] supports professional development that specifies classroom strategies, provides video/audio feedback, microteaching, and practice is the most effective vehicle for professional development. Researchers interested in examining the gap in the literature implied by the professional teacher behavior/academic optimism relationship might consider exploring the kinds of professional development in the school and the means of choosing that professional development that foster this relationship.

The fact that academic optimism contributed more to the explanation of reading achievement than SES is provocative and lends support to a growing body of research that has had similar findings [1–9]. The implications for administrators, point to the powerful influence of setting the stage for the formation of a culture of optimism that can outweigh the deleterious effects of poverty on achievement. This influence is likely to be more significant in middle school and beyond where both optimism and professional teacher behavior seem to lag.

Finally, the intent of the investigation reported here was to test some important school elements in their relationship to academic optimism and then to plan research to fill in gaps in the literature that would increase our understanding of how to build optimism. More research is needed that explores specific strategies used by professionally oriented leaders to establish a culture that supports academic optimism and professional teacher behavior and in so doing has the potential to influence achievement above and beyond the effects of demographic variables such as poverty. These findings have important implications for principals. We agree with Tschannen-Moran [27] in that the professional orientation of the principal and the ability of the principal to establish enabling structures is necessary to foster a culture of professionalism and optimism among teachers that allows teachers the freedom and discretion to address student needs.

## 5. Materials and Methods

Data for this manuscript were collected from schools in a Southern State in the USA. Data are not available due to Institutional Review Board restrictions related to confidentiality. Data were collected by a cohort of six doctoral students under the supervision of the authors of this manuscript at regularly scheduled faculty meetings from 1665 teachers in 54 schools. Individual teacher data were aggregated to the school. Information regarding the percent of students on the free and reduced lunch program per school were collected from the State Department of Education website. Please contact the corresponding author for additional information.

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**Author Contributions:** Roxanne M. Mitchell and C. John Tarter conceived and designed the study, oversaw the collection of data, analyzed the data, and wrote up the results and discussion. Both authors have read and approved the final manuscript.

**Conflicts of Interest:** The authors declare no conflict of interest.

## Abbreviations

The following abbreviations are used in this manuscript:

ESS	Enabling School Structure (also referred to as Principals' Professional Orientation toward Leadership)
SAO	School Academic Optimism
PTB	Professional Teacher Behavior
SES	Socio-economic status
RA	Reading Achievement
Level	School Level

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