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Key Characteristics of Middle School Performance

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Abstract

This research project examined student performance in middle schools with a grade configuration of six through eight. Schools were categorized into two groups: high-performing middle schools—middle schools making adequate yearly progress for two consecutive school years, and low-performing middle schools—middle schools not making adequate yearly progress for two consecutive school years. Participants included 283 middle school teachers, 171 from high-performing middle schools, and 112 from low-performing middle schools.

Questionnaires were used to gather information about middle school practices, school climate, and school health. Data suggested that low-performing middle schools scored higher on organizational structures, supportive, directive, and committed behavior, collegial leadership, principal influence, and resource support. High-performing schools scored higher on collegial behavior. No significant differences were found in institutional integrity, teacher affiliation, academic emphasis, instructional practices, and restrictive and disengaged behavior.

This study helped to determine if low-performing middle schools and high-performing middle schools differed in school climate and health, organizational structures, and instructional practices.

Introduction

A new era of accountability began on January 8, 2002, as President George W. Bush signed into law the federal No Child Left Behind Act of 2001. The intent of the law is to ensure that all students, regardless of race, disability, or socioeconomic background, receive a high-quality education. This reform legislation calls for a new focus on school accountability for academic achievement of all students.

The new accountability system requires testing and disaggregation of test results to show adequate yearly progress (AYP) in particular student subgroups. Subgroups found at the schools involved with this study included students with disabilities, economically disadvantaged students, black students, white students, and students with limited English proficiency. Schools must improve student achievement in all student subgroups to meet accountability standards mandated by federal law. Schools that fail to meet criteria established in the No Child Left Behind Act of 2001 for two consecutive years are sanctioned by the law to implement specific school-based interventions to meet performance standards.

Given the concern for middle level schools to achieve adequate yearly progress in all student subgroups, this project examined student achievement in middle schools to determine if low-performing middle schools and high-performing middle schools differed in school climate, school health, organizational structures, and instructional practices.

The Development of Middle Schools

Initially, the junior high school was a mechanism to reduce the time children spent in elementary schools (Association of Supervision and Curriculum Development [ASCD], 1961). Its focus was to provide a smoother transition from elementary school to high school. It claimed to provide an educational program more suitable for young adolescents. The first junior high was opened in 1909. Existing human development research had little impact on the traditional junior high school because relatively little was known about adolescent development (Weller, 1999).

School Climate

Environment

Creating a healthy school environment for students begins by supporting healthy relationships among the staff. Healthy relationships produce a climate conducive to honesty, open communication, and risk-taking (Ames & Miller, 1994). In a true learning community, cooperative learning and mutual respect are expected of faculty as well as students. Establishing a supportive school environment increases self-esteem and achievement (Cantwell, 2003).

An inclusive environment ensures that all students, regardless of race, disability, strengths, or weaknesses, are significantly involved in the school community (King, 2003). Middle schools thrive as they connect all constituents to a belief in and thirsting for success at their school. Building a sense of community makes students more apt to share perspectives of their teachers, ultimately leading to increased academic achievement (Parker, 2002).

School climate is a critical component of effective middle schools (Hoy & Sabo, 1998). A warm adolescent-centered environment is friendly, relaxed, respectful, calm, and energetic (Lipsitz, 1997). The overall school climate is enhanced by positive behavior and attitudes of students and teachers (Thomas & Bass, 1992). Developing a productive environment conducive to learning involves establishing a school atmosphere that promotes cooperation, trust, loyalty, openness, pride, and commitment. School climate is also associated with academic achievement, faculty morale, and student behavior (Parish, 2002). The optimal middle school climate is responsive to the developmental needs of each student, stimulating personal and academic growth (Johnson, 2002).

A healthy middle school climate emerges from combined interactions between members of the school community (Hoy & Sabo, 1998). An effective middle school establishes a climate that cultivates respectful and supportive relationships (Swaim, 2003). Creating a healthy school environment for students begins by supporting healthy relationships among the staff. Healthy relationships produce a climate conducive to honesty, open communication, and risk-taking (Ames & Miller, 1994). In a true learning community, cooperative learning and mutual respect are expected of faculty as well as students. Establishing a supportive school environment increases self-esteem and achievement (Cantwell, 2003).

Close, trusting relationships with adults and peers create a climate that supports personal and academic growth. The school environment must be structured in a manner that supports teachers developing meaningful relationships with each student (Roeser & Eccles, 1998). Adult mentors provide individualized support to assist students in establishing goals, planning areas of study, and involving parents in the process (Southern Regional Education Board, 2001a). Students are content in schools where they feel justly treated, safe, and supported by teachers (Samdal, Nutbeam, Wold, & Kannas, 1999).

Collaboration

Collaboration among constituents of the learning community is important is maintaining a positive, productive school climate. Teachers and administrators who work in partnership reap greater returns in student achievement (Cantwell, 2003; Southern Regional Education Board, 2001b). Administrators in effective middle schools prioritize collaboration and shared decision-making. In addition, a high level of collaboration among teachers enhances the learning environment (Whitmore, 1997).

The pinnacle of teacher collaboration is a co-teaching partnership. Cooperative teaching between a content teacher and a special education teacher supports diverse learners and provides academic assistance to ensure success for all students (Morocco & Aguilar, 2002). Co-teaching provides a concentrated support structure for all students, not just those students who are identified as students with disabilities. The special education teacher can provide expertise about special needs students and resources for struggling learners. An additional teacher decreases student-teacher ratio to increase more individualized attention (Wischnowski, Salmon, & Eaton, 2004). Parks (2001) found that all students, students with disabilities and students without disabilities perform as well or better in combination or co-teaching settings than students in a pullout setting. Students involved collaboratively in the developing and planning process of innovative ideas are more apt to acknowledge and support proposed changes (Bock & Joseph, 2000).

Organizational Structures

Interdisciplinary Teams

One of the most significant changes to middle schools was the concept of interdisciplinary teams sharing the same students. According to Danielson (2002), schools focused on student performance capitalize on teaming. Teaching young adolescents is too complex a task for educators to teach in isolation from each other (Erb, 1995). Interdisciplinary teaming provides a strong support system for teachers as they work as colleagues to solve problems and meet the diverse needs and backgrounds of the students (Bryant, Linan-Thompson, Ugel, Hamff, & Hougen, 2001; Morocco & Aguilar, 2002). Generally, interdisciplinary teams are composed of two to five teachers representing the academic core subjects (Danielson, 1996).

Effective teamwork, according to Danielson (2002), creates a supportive environment conducive to reaching a common goal that cannot be accomplished alone. Interdisciplinary teaming reduces teacher isolation, enhances collegial relationships, and provides a strong network of social and emotional support for teachers (Gatewood, Cline, Green & Harris, 1992; Mills, Powell & Pollak, 1992).

One of the most powerful tools that middle schools can use to reach student performance goals is joint instructional planning (Danielson, 2002). Interdisciplinary teams share a common time for planning, which facilitates collaborative decision-making, curricular cohesiveness, and curriculum integration (Erb, 1995). Teachers can openly share successes, failures, and innovative ideas in a supportive environment. Additionally, team planning ensures a cohesive support system for each student as the group analyzes potential problem areas and collaboratively develops an appropriate strategic plan of action for individual students (Peterson, 1990).

Flowers, Mertens, and Mulhall (1999) reported five positive outcomes of interdisciplinary teaming:

1. Teaming combined with common planning time improves student performance.
2. Teaming creates a positive, rewarding, and satisfying work climate.
3. Teaming increases communication with parents.
4. Teaming increases job satisfaction.
5. Teaming is linked with higher student performance.

Scheduling

As the interdisciplinary team concept developed, many middle schools adopted different forms of block scheduling consisting of dividing the instructional day into large blocks of time. This enables teachers and students sufficient time to work together to develop solutions to relevant problems. Large blocks of time

also facilitate teacher-student relationships and enhance peer relationships. Extended time periods allow the teacher to provide more intensive guidance and support and develop more meaningful units of learning that are better suited for the needs of the students. Teachers also have ample time to initiate small-group instruction, individualized instruction, and skill development. In addition, a block schedule promotes flexibility in planning for instruction and regrouping to meet the diverse needs of students (Stroud, 2002).

Garza (2001), however, found that the alternate block schedule has the potential to decrease student achievement in the areas of reading, writing, and mathematics. Garza also suggested that students with disabilities do not perform as well on an alternate block schedule format.

Advisory Periods

Advisory groups and periods, homeroom periods, and counseling services can provide the necessary support system needed during this developmental stage of middle school students (Goodwin, 2003). Advisory groups usually meet daily for 15–20 minutes, providing the stability of a consistent peer group and one adult to which students belong (George & Stevenson, 1992). The core of the support mechanism, however, is the one-on-one relationship between students and their advisors (Goodwin). Teachers have the opportunity to build caring relationships with students and gain valuable knowledge of students to better meet individual needs.

Caswell (2003) found that advisory periods have a significant impact on student adjustment and student achievement. Students also obtain a greater sense of control and an improved capacity to communicate thoughts and feelings. As indicated earlier, student-teacher personal relationships are strengthened and intergenerational partnerships are established built on mutual respect, advocacy, and trustworthiness (George & Stevenson, 1992).

Instructional Practices

Danielson (1996) suggested that successful instruction requires students to actively participate in learning opportunities. Middle school students learn by doing hands-on learning activities, not by being saturated with information (Parker, 2002; Southern Regional Education Board, 2001c). King (2003) found that effective teachers address individual developmental differences, establish appropriate challenges, and teach critical thinking skills. Teachers vary instruction, curriculum and assessment to meet the diverse developmental and educational needs of the students. Farkas (2003) found that student achievement, attitude, empathy, retention, and transfer are more obtainable in multisensory approaches than traditional approaches. Moreover, he suggested that students are more successful when teachers use learning-styles methods to teach.

Marzano, Pickering, and Pollock (2001) identified nine categories of instructional strategies associated with student achievement:

1. identifying similarities and differences of items, events, processes, or concepts
2. summarizing information and taking notes
3. emphasizing effort and providing recognition
4. assigning valuable homework and practice
5. using nonlinguistic representations to increase student knowledge
6. fostering cooperative learning
7. setting learning goals and giving specific, timely feedback
8. generating and testing hypotheses and questions
9. using cues and advance organizers

Academic Support

According to Balfanz and Mac Iver (2000), instructional strategies should focus on meaning, inspire student motivation, and provide peer support for learning. To boost learning for all students, the education program can be shaped to accommodate student needs by grouping students for learning, scheduling larger blocks of academic learning time, and expanding learning opportunities. Ames and Miller (1994) indicated that tracking should be eliminated. Teaching students self-determination skills, such as problem-solving skills and study planning skills, promotes access to the general curriculum (Palmer, Wehmeyer, Gipson & Agran, 2004).

Danielson (2002) indicated that a successful academic support program supports all students in achieving performance goals. The program operates on the premise that all students can learn, yet extra assistance may be required to grasp new concepts and attach meaning. Within this philosophy, individuals can receive assistance as needed without being stigmatized.

In high-performing middle schools, students receive an extensive assortment of learning supports to increase their motivation to learn and enable them to succeed academically (Balfanz & Mac Iver, 2000). High expectations must be accompanied by increased individual attention, strong teacher involvement, specialized daily instruction, and parental involvement. In addition, cooperative learning and cross-age tutoring can effectively reach students with varied abilities and various rates of learning. Struggling students must be given additional time and opportunities to succeed. Before- and after-school tutoring, Saturday enrichment programs, and summer classes can extend learning opportunities for at-risk students (Southern Regional Education Board, 1998).

Academic supports offered outside the parameters of the school day are voluntary and limited in capacity. "Sustained, systematic, and differentiated" (p. 139) high-quality assistance offered during the school day can close achievement gaps and accelerate learning for a large number of students (Balfanz, Ruby, & Mac Iver., 2002). By implementing an elective replacement approach, students replace an elective with an accelerated learning course in math or reading. This approach reduces the stigma frequently associated with receiving remedial instruction in resource rooms (Epstein & Mac Iver, 1990). Highly qualified instructors in smaller classes use a variety of instructional methods and techniques to accelerate learning.

Professional Development

Ongoing professional development with extensive follow-up support is critical for middle school teachers working with such a diverse student population (Balfanz & Mac Iver, 2000; Weir & Hobbs, 1999). Professional development should assist teachers in understanding middle school realities and appropriate instructional strategies for adolescent learners (Ranta, 2001). Furthermore, additional teacher training should focus on interdisciplinary teaming practices that are related to student achievement and school climate (Washington, 2000).

Sustained, high-quality staff development reinforces effective teaching that promotes high academic performance for all students (Phillips, 2003). Balfanz and Mac Iver (2000) recommend layers of intensive, ongoing support for teachers: continuous grade and subject specific training, sustained follow-up support from experienced curricular coaches, and opportunities for networking with teachers in other schools. Staff development can also promote collaboration between general education teachers and special education teachers as teachers share responsibility for academic achievement for all students (Phillips; Wischnowski, Salmon, & Eaton, 2004).

Professional development can facilitate teachers in examining their own strengths, learning from their peers, and taking responsibility for their own growth as well as the academic growth of their students (Reeves, 2004). Phillips (2003) suggested that student achievement can improve as teachers increase learning and awareness by participating in professional learning activities such as study groups.

Accountability Programming

The No Child Left Behind Act of 2001 was the reauthorization of the Elementary and Secondary Education Act (ESEA) (Rudalevige, 2003). The statutory framework was built on 1988 and 1994 ESEA legislation. The purpose of NCLB is to improve academic achievement for all students by improving state accountability systems, defining state standards for academic proficiency, enhancing quality standards for school staff, and testing students annually to determine academic progress (Wong & Nicotera, 2004).

Obtaining federal funding requires compliance of requirements specified in NCLB (Guthrie & Springer, 2004). States are required to develop performance standards that are linked to annual student assessments

in reading and math for students in grades 3 through 8. Annual test scores must be disaggregated to reflect demographic subgroups. Detailed report cards must provide parents with information concerning their child's performance and the school's performance in comparison to other schools within the district (Kirby, McCaffrey, Lockwood, McCombs, Naftel, & Barney, 2002). Schools failing to demonstrate adequate yearly progress with regard to performance standards for more than two consecutive years must be identified as schools in need of improvement (Furney, Hasazi, Clark/Keefe, & Hartnett, 2003; Guthrie & Springer; Kirby et al., 2002; Viteritti, 2004). The long-term goal is for all students to perform at proficiency level by 2013 (Parkes & Stevens, 2003; Viteritti).

Methodology

Design

Three teacher questionnaires were used to conduct a comparative analysis. All questions on the questionnaires were anchored to a 4-point Likert scale in a parallel format. Questionnaires were completed by certified teachers. Data were coded to allow group comparisons between low-performing middle schools and high-performing middle schools. Low-performing middle schools were defined as middle schools that have not met AYP for two consecutive years in all three subject areas (reading, language, and math). High-performing middle schools were defined as middle schools that have met AYP for two consecutive years in all three subject areas (reading, language, and math).

Participants

Participants in this study included teachers from nine middle schools located in a southern rural state. These schools were classified into two groups based on performance standards established by the No Child Left Behind Act. Teachers in four low-performing middle schools and five high-performing middle schools were selected to participate in the study.

Instruments

Three questionnaires were used to gather information about school climate and health, organizational structures, and instructional practices in middle schools. School climate and health was measured by two questionnaires developed specifically for middle schools by Hoy and Sabo: Organizational Climate Description Questionnaire for Middle Schools (OCDQ-RM) and Organizational Health Inventory for Middle Schools (OHI-M). Organizational structures and instructional practices in middle schools were measured by a questionnaire developed by the researchers based on recommendations found in the literature (see Appendix A).

The Organizational Climate Description Questionnaire for Middle Schools (OCDQ-RM) is a 50-item questionnaire that describes particular aspects of principal and teacher behavior in middle schools. There is no copyright restriction on the instrument (Hoy & Sabo, 1998). The questionnaire is designed to be completed in fewer than 10 minutes. The 50 items of the instrument define the six dimensions of the OCDQ-RM. Principal behavior is divided into three dimensions: supportive behavior, directive behavior, and restrictive behavior. In addition, teacher behavior is divided into three dimensions: collegial behavior, committed behavior, and disengaged behavior. Specific items on the questionnaire provide the operational scales for each dimension. Participants used a 4-point scale (1 = rarely occurs, 2 = sometimes occurs, 3 = often occurs, and 4 = very frequently occurs) to describe the extent to which certain behavior patterns occur in the school. Each item was scored for each participant, and then an average school score for each item was computed by averaging the item responses across the total school. Average subtest scores determined the climate profile of the school. Reliability scores for the scales of each subtest are reasonably high (see Table 1).

Table 1
Subscales of OCDQ-RM

Variable	Cronbach's alpha
Principal's Behavior	
Supportive behavior	.96
Directive behavior	.88
Restrictive behavior	.89
Teachers' Behavior	
Collegial behavior	.90
Committed behavior	.93
Disengaged behavior	.87

The Organizational Health Inventory for Middle Schools (OHI-M) questionnaire describes the particular health and well-being of behavior and interactions in middle schools. The six dimensions of health contained in the questionnaire represent the basic needs of schools: institutional integrity, collegial leadership, principal influence, resource support, teacher affiliation, and academic emphasis (see Table 2).

Table 2
Subscales of OHI-M

Variable	Cronbach's alpha
Institutional integrity	.93
Collegial leadership	.94
Principal influence	.94
Resource support	.93
Teacher affiliation	.94
Academic emphasis	.94

The Middle School Questionnaire describes two aspects of middle schools derived directly from existing theoretical and empirical knowledge: organizational structures and instructional practices (see Table 3).

Table 3
Subscales of Middle School Questionnaire

Variable	Cronbach's alpha
Organizational Structures	.71
Instructional Practices	.80

Findings

Multivariate analyses of variance with follow-up analysis of variance were the statistical models used in the analysis of data. Raw scores of each item were scored for each participant, and then an overall scale score was computed for each participant. All scores on all three instruments were left as raw scores for the purposes of comparing means between low-performing schools and high-performing schools. SPSS was utilized to examine the theory-based directional hypotheses. Significance was set at $p < .05$.

Nine administrators granted permission for teachers to complete the questionnaires. Two hundred eighty-three middle school teachers responded. This included 171 respondents from five high-performing middle schools and 112 respondents from four low-performing middle schools. These figures represented an overall return rate of 81%.

Since participation in this study was voluntary, the sample size associated with each subscale varies. This may or may not have limited the external validity of these results. As shown in Table 4, the number of cases for an analysis ranges from 236 to 277. The mean of each subscale indicates the perceived level of characteristic demonstrated in the middle school. Higher mean scores suggest greater agreement that the characteristic is demonstrated in the school. Lower mean scores indicate lower agreement that the characteristic is demonstrated in the school.

Table 4
Descriptive Data by Subscales

Subscale	*n*	Min	Max	M	SD
Middle School Questionnaire					
Organizational Structures	254	9	33	20.86	5.06
Instructional Practices	239	56	136	105.78	16.00
OCDQ-RM					
Supportive Behavior	266	11	44	32.49	8.21
Directive Behavior	275	6	24	14.93	4.31
Restrictive Behavior	277	4	16	8.42	2.73
Collegial Behavior	268	12	44	29.92	5.94
Committed Behavior	273	13	36	26.90	4.76
Disengaged Behavior	272	9	32	15.03	4.96
OHI-M					
Institutional Integrity	245	7	28	19.65	4.31
Collegial Leadership	263	10	36	27.80	5.97
Principal Influence	236	9	24	17.93	3.22
Resource Support	269	7	24	17.68	4.09
Teacher Affiliation	265	10	32	25.38	3.71
Academic Emphasis	266	13	36	24.26	4.38

The data in Table 5, 6, and 7 reveal that low-performing middle schools showed higher mean scores in 10 subscales: organizational structures, instructional practices, supportive behavior, directive behavior, restrictive behavior, committed behavior, institutional integrity, collegial leadership, principal influence, and resource support. High-performing middle schools demonstrated higher mean scores in four subscales: collegial behavior, disengaged behavior, teacher affiliation, and academic emphasis.

Table 5
Descriptive Data by Subscales and Performance Level for Middle School Questionnaire

Subscale	*n*	M	SD
Middle School Questionnaire			
Organizational Structures			
High	139	19.22	4.81
Low	80	23.59	4.68
Instructional Practices			
High	139	103.74	16.35
Low	80	108.60	15.47

Table 6
Descriptive Data by Subscales and Performance Level for OCDQ-RM

Subscale	*n*	M	SD
OCDQ-RM			
Supportive Behavior			
High	145	31.43	8.62
Low	93	34.32	7.18
Directive Behavior			
High	145	14.46	4.23
Low	93	16.11	4.20
Restrictive Behavior			
High	145	8.52	2.51
Low	93	8.57	3.20
Collegial Behavior			
High	145	30.90	6.05
Low	93	28.25	5.24
Committed Behavior			
High	145	26.08	4.37
Low	93	28.18	4.85
Disengaged Behavior			
High	145	15.26	5.15
Low	93	14.94	5.06

Table 7
Descriptive Data by Subscales and Performance Level for OHI-M

Subscale	*n*	M	SD
OHI-M			
Institutional Integrity			
High	137	19.80	4.46
Low	71	19.83	3.75
Collegial Leadership			
High	137	27.14	5.85
Low	71	29.35	5.61
Principal Influence			
High	137	17.43	3.38
Low	71	18.70	2.80
Resource Support			
High	137	16.99	4.23
Low	71	18.44	3.75
Teacher Affiliation			
High	137	25.40	3.82
Low	71	25.27	3.64
Academic Emphasis			
High	137	24.69	4.07
Low	71	23.48	4.65

The Box's Test indicated that homogeneity of variance-covariance was met on all three instruments; therefore, the Wilks' Lambda was utilized. The first MANOVA was conducted to determine if the implementation of middle school practices as recommended in the literature affected student performance. MANOVA results

indicated that implementation of middle school practices were significantly different in high-performing and low-performing middle schools [$\Lambda = .834$, F (2, 216) = 21.54, $p < .001$, $\eta^2 = .166$. ANOVAs were conducted as follow-up tests. To counteract the potential of an inflated error due to multiple ANOVAs, a Bonferroni-type adjustment was made setting significance at $p < .025$. The results of the first ANOVA indicated that there was a significant difference in organizational structures [F (1, 217) = 42.61, p <.001] between high and low-performing middle schools. The mean score of high-performing middle schools (19.22) was lower than the mean score of low-performing middle schools (23.59). The results from the second ANOVA demonstrated no significant differences in instructional practices [F (1,217) = 4.66, p = .032] in high and low-performing middle schools.

A second MANOVA was conducted to determine if school climate was related to student performance in middle schools. Six subscales in OCDQ-RM measured behaviors associated with school climate. MANOVA results indicated that school climate was significantly different in high-performing and low-performing middle schools [$\Lambda = .843$, F (6, 231) = .843, $p < .001$, $\eta^2 = .157$]. Univariate ANOVA tests were conducted as follow-up tests. To counteract the potential of an inflated error due to multiple ANOVAs, a Bonferroni-type adjustment was made setting significance at $p < .008$. Results indicated that there were significant differences in directive behavior, collegial behavior, and committed behavior. Results of the first ANOVA indicated that there was a significant difference in directive behavior [F (1,236) = 8.70, p = .004] in high-performing and low-performing middle schools. The mean score of high-performing middle schools (14.46) was lower than the mean score of low-performing middle schools (16.11). The results of the second ANOVA indicated that there was a significant difference in collegial behavior [F (1, 236) = 12.05, p = .001] in high-performing and low-performing middle schools. The mean score of high-performing middle schools (30.90) was higher than the mean score of low-performing middle schools (28.25). The results of the third ANOVA indicated that there was a significant difference in committed behavior [F (1, 236) = 12.07, p = .001] in high-performing and low-performing middle schools. The mean score of high-performing middle schools (26.08) was lower than the mean score of low-performing middle schools (28.18).

A third MANOVA was conducted to determine if school health was related to school performance in middle schools. Six subscales in OHI-M measured characteristics associated with school health. MANOVA results indicated that there was a significant difference in school health in high-performing and low-performing middle schools [$\Lambda = .852$, F (6, 201) = 5.81, $p < .001$, $\eta^2 = .148$]. ANOVAs were conducted as follow-up tests. To counteract the potential of an inflated error due to multiple ANOVAs, a Bonferroni-type adjustment was made setting significance at $p < .008$. A significant difference was found in principal influence [F (1, 206) = 7.43, p = .007] in high-performing and low-performing middle schools. The mean score of high-performing middle schools (17.43) was lower than the mean of low-performing middle schools (18.70).

Discussion

It was expected that high-performing middle schools would score higher on implementation of middle school practices as recommended in the literature than low-performing middle schools. However, data collected from returned questionnaires demonstrated that low-performing schools scored slightly higher on organizational structures and instructional practices. MANOVA results indicated a significant difference in both dimensions. Follow-up ANOVAs showed only a significant difference in organizational structures. Low-performing middle schools scored higher on organizational structures.

These findings are not consistent with earlier studies. Elmore (2000) determined that the greater extent of middle school implementation, the higher the level of student performance. Researchers have found that organizational structures such as interdisciplinary teams, common planning times, and advisory periods have a positive impact on student achievement (Caswell, 2003; Danielson, 2002; Flowers, Mertens, & Mulhall, 1999; George & Oldaker, 1985). Interdisciplinary teams create a supportive environment for students and teachers, building teacher confidence, student stability, and a sense of community (Danielson). Common planning times enhance collaboration, cohesiveness, and communication (Erb, 1995). Advisory periods promote caring relationships between teachers and students (Goodwin, 2003).

Previous studies have indicated that instructional practices are linked to student performance. Weller (1999) indicated that a variety of instructional strategies, an array of learning supports, and individualized attention can reach all students with diverse learning needs and a wide range of learning rates and abilities. Inclusive educational programs promote student achievement of all students, not only those students with disabilities (Kolstad, Wilkinson, & Briggs, 1997). Phillips (2003) determined that ongoing professional development focused on effective teaching practices results in high academic performance for all students.

Two possible conclusions can be drawn from the results of the present study as related to implementation of middle school practices. As low-performing middle schools struggle to make adequate yearly progress as defined in the No Child Left Behind Act, they may be implementing organizational structures associated with school performance such as interdisciplinary teams and common planning times trying to avoid federal and state sanctions. Accountability for all students, including students with disabilities, compels all middle schools to use effective instructional strategies to increase learning for all students. Enforcement of federal and state accountability systems could reasonably explain why no significant differences were found in implementation of instructional practices in high-performing and low-performing middle schools. All middle schools, regardless of performance levels, are struggling to make adequate yearly progress with all students, in particular, those students who were disregarded prior to the landmark legislation.

The researchers anticipated higher scores for high-performing middle schools on supportive behavior, collegial behavior, and committed behavior than low-performing middle schools on the Organizational Climate-Description Questionnaire for Middle Schools (OCDQ-RM). MANOVA results demonstrated that there was a significant difference between high-performing and low-performing middle schools in these three dimensions of school climate. Follow-up ANOVAs indicated that significant differences were found between the two groups. Supportive behavior and committed behavior were evident to a greater extent in low-performing middle schools. High-performing middle schools scored higher on collegial behavior.

Collegial behavior is defined as teacher behavior that promotes healthy personal and professional interactions among teachers (Hoy & Sabo, 1998). Collegial behavior appears to be a significant contributor to student performance. This finding concurs with Ames and Miller (1994) that suggested that establishing a supportive environment for students conducive to learning starts with healthy relationships among adults within the middle school setting. Creating a friendly, warm atmosphere fosters greater collegiality and collaboration (Lipsitz, 1997) that enhances job satisfaction and performance. The daunting task of ensuring that all students with diverse backgrounds and wide-ranging needs perform well on high-stakes assessments can overwhelm middle school educators. Building a strong support network for middle school teachers is vital in this age of accountability to reduce teacher stress, burnout, and attrition. Healthy relationships between teachers can increase teacher confidence, competence, and efficacy, which elevate student achievement (Erb, 1995).

Research has shown that interdisciplinary teaming promotes collegiality. Coupled with common planning time, interdisciplinary teaming reduces teacher isolation and builds collaborative work environments (Mills et al., 1992). Team members form attachments as they share students and planning times. Teachers working together as colleagues create solutions for mutual problems, build professional and personal support systems, and develop rewarding relationships. Researchers have found that teaming creates a rewarding work environment for teachers, and ultimately improves student performance (Flowers et al., 1999).

Findings from this study strongly suggest that middle school administrators should recognize the importance of teacher relationships and their impact on student performance. Providing opportunities for teachers to interact strengthens personal and professional relationships. As relationships are cultivated, collaboration is increased, promoting student and teacher performance.

Supportive behavior and committed behavior were demonstrated to a greater extent in low-performing middle schools. This finding does not concur with previous studies. Cuban (1989) indicated that in schools focused on academic performance principals offer tangible and emotional support for teachers, and teachers are committed to working with at-risk students to increase learning. As noted earlier, this study suggests that

low-performing schools are making every effort to improve student performance to avoid federal and state sanctions; therefore, this could possibly explain more principal support and teacher commitment in these schools.

Lower scores in high-performing middle schools were expected in directive behavior, restrictive behavior, and disengaged behavior on the Organizational Climate Description Questionnaire for Middle Schools (OCDQ-RM). Results indicated only a significant difference in directive behavior. High-performing middle schools did score lower on directive behavior.

Lower directive scores in high-performing middle schools suggest that principals freely give teachers the opportunity to make instructional decisions based on professional knowledge (Hoy & Sabo, 1998). Teachers feel comfortable in experimenting with innovative ideas to increase student learning. The principal is not rigid and controlling, but supportive of teachers acting independently to improve instruction.

This finding corroborates the research by Phillips (2003) that recommended school administrators establish school climates that cultivate experimentation and ongoing improvement. Providing safe environments for teachers to share ideas and to experiment with novel teaching strategies can promote student performance (Ehrlich, Fiene, & Korpela, n.d; Southern Regional Education Board, 2001b). Promoting teacher autonomy and empowering teachers increase organizational commitment which is positively correlated with student performance (Kushman, 1990). According to Johnson (2002), principals in high-performing schools encouraged more teacher participation in professional decisions; nevertheless, teacher autonomy and shared decision-making was accompanied with responsibility and accountability.

Results of the present study indicate that middle school administrators provide ongoing professional development to increase teacher knowledge, confidence, and skill in teaching adolescent learners. Administrators should then provide a safe environment that supports teachers as they utilize innovative techniques and strategies to meet the diverse needs of the students.

Higher scores were anticipated on all six dimensions of the Organizational Health Inventory for Middle Schools (OHI-M) in high-performing middle schools than low-performing middle schools. A significant difference was only found in one dimension. Results demonstrated that high-performing middle schools scored lower than low-performing middle schools in principal influence. Principal influence is connected to the ability of the principal to gain support from his superiors (Hoy & Sabo, 1998).

Previous studies dispute findings of the present study regarding collegial leadership. Roeschlein (2002) and Johnson (2002) suggested that successful administrators were personable and communicated regularly with their teachers in a variety of ways. Elmore (2000) also indicated that productive administrators convey high expectations for teachers and students, yet are willing to provide needed assistance to meet the demanding challenges of ensuring academic success for all students.

The other five dimensions of the OHI-M failed to show significant differences between high-performing and low-performing middle schools: institutional integrity, collegial leadership, resource support, teacher affiliation, and academic emphasis. The results of this study suggest that all middle schools are fairly consistent in maintaining a healthy school environment. A possible explanation for no significant difference in academic emphasis is the realization that successfully meeting standards set in the federal mandated state accountability system requires all middle schools to focus every facet of the educational program on improving instruction for all students regardless of race, ethnicity, or ability. School success hinges upon academic excellence of all students.

Implications

The findings of this study have important implications for middle school administrators particularly in the areas of collegial behavior and directive behavior. This study yielded promising evidence linking teacher interpersonal relationships with student performance. It is recommended that administrators

create opportunities for teachers to interact and build relationships. Teachers maximize accessible time to maintain momentum needed to ensure student success. This dilemma minimizes available time for teachers to build relationships with their colleagues. In the era of accountability, a teacher support system is essential. Administrators must proactively initiate team-building activities to encourage healthy interactions. Administrators must be cognizant that teacher isolation is set by default.

Middle school administrators should consider implementation of interdisciplinary teams with common planning time to improve collegiality and collaboration. Teachers can be overwhelmed with the responsibility of ensuring that all students demonstrate academic growth. Interdisciplinary teaming promotes collegiality by providing a support system for teachers as they work collaboratively to meet the educational needs of their shared students and improve student achievement. Incorporating special education teachers into the teams can benefit colleagues and students as additional support and expertise is available to enhance instruction for all students.

The present study suggests that administrators should encourage collaboration between teachers. Teachers working collaboratively create a healthy environment conducive to learning. Greater gains in student achievement can be accomplished as teachers work together to improve instruction for all students. As noted previously, collaboration between regular education teachers and special education teachers can expand learning for all students regardless of ability.

This study demonstrates the importance of creating a supportive environment that fosters sharing of ideas. Administrators should provide a supportive environment that invites teachers to share ideas freely. Teachers should be allotted time to share ideas with colleagues.

Study findings underscore the importance of administrators broadening the professional knowledge base of teachers and giving them the freedom to implement new practices in the classroom. Teachers need intensive, ongoing training and support to better understand the unique needs of adolescent learners and effective instructional strategies associated with student performance. Teachers can also facilitate their own learning by participating in study groups and other professional learning activities. As teachers broaden their expertise, administrators should encourage teachers to assume ownership of new strategies and implement them in their classrooms.

Administrators are urged to solicit teacher input into decisions that impact them and their students. Involving teachers in decision-making enhances job satisfaction, teacher efficacy, and teacher empowerment. Teachers are also more apt to implement new instructional programs and practices if they are involved in the planning.

Recommendations for Future Research

This study represents an ongoing effort to understand the significant differences between high-performing and low-performing middle schools. Future studies could explore demographic differences between these two groups. Student and/or teacher characteristics could impact student performance. School size and/or geographic location of the school may also influence student achievement. Academic performance could be impacted by the experience level of teachers and/or administrators.

Analysis of the present study suggests that future research is warranted in implementation of middle school practices and its effect of student performance within each subgroup. Additional research is needed to systematically examine the impact of interdisciplinary teams, common planning time, and/or advisory periods on student performance.

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APPENDIX A

Middle School Questionnaire

Directions: The following are statements about your school. Please indicate the extent to which each statement characterizes your school by circling the appropriate response.

RO=Rarely Occurs SO-Sometimes Occurs O=Often Occurs VFO=Very Frequently Occurs

1.	Teachers are assigned to teams that share students.	RO	SO	O	VFO
2.	Special education teachers are incorporated into teams.	RO	SO	O	VFO
3.	Teams share a common time for planning.	RO	SO	O	VFO
4.	The school day is organized into large blocks of time.	RO	SO	O	VFO
5.	Scheduling is flexible.	RO	SO	O	VFO
6.	Teachers use whole group instruction.	RO	SO	O	VFO
7.	Advisory groups meet regularly.	RO	SO	O	VFO
8.	Students are assigned to the same homeroom or advisory teacher for all the years in middle school.	RO	SO	O	VFO
9.	Learning activities encourage social interaction.	RO	SO	O	VFO
10.	The school day is organized into short periods of time.	RO	SO	O	VFO

11.	Scheduling is firm.	RO	SO	O	VFO
12.	Curriculum is relevant, challenging, integrative, and exploratory.	RO	SO	O	VFO
13.	Instructional practices are based on the biological and social development of the adolescent.	RO	SO	O	VFO
14.	Learning activities are varied.	RO	SO	O	VFO
15.	Student achievement data and student work samples are analyzed to make instructional decisions.	RO	SO	O	VFO
16.	Data is disaggregated to determine weak areas needing improvement.	RO	SO	O	VFO
17.	Students learn by hands-on learning activities, not by being saturated with information.	RO	SO	O	VFO
18.	Teachers vary instruction, curriculum, and assessment.	RO	SO	O	VFO
19.	Teachers use multisensory teaching approaches.	RO	SO	O	VFO
20.	Teaching practices match the needs of the learners.	RO	SO	O	VFO
21.	Students gain knowledge that is relevant to their world by engaging in active learning.	RO	SO	O	VFO
22.	Teachers connect learning to the various academic disciplines through an integrated curriculum.	RO	SO	O	VFO
23.	A personal development component is included in the educational program.	RO	SO	O	VFO
24.	Special education teachers are incorporated into interdisciplinary teams.	RO	SO	O	VFO
25.	Ego-building activities are integrated into the curriculum.	RO	SO	O	VFO
26.	Teachers use a variety of individualized instructional materials and strategies.	RO	SO	O	VFO
27.	Instructional strategies focus on meaning.	RO	SO	O	VFO
28.	Instruction is individualized.	RO	SO	O	VFO
29.	Peer tutoring is used with struggling students.	RO	SO	O	VFO
30.	Curriculum is developmentally appropriate and sequential.	RO	SO	O	VFO
31.	Students with disabilities are included in regular education classes as much as possible.	RO	SO	O	VFO
32.	All students have the opportunity to succeed regardless of background or ability.	RO	SO	O	VFO
33.	Teachers use cooperative learning.	RO	SO	O	VFO
34.	Teachers are aware of developmental needs of middle school students.	RO	SO	O	VFO
35.	Professional development helps teachers understand the unique needs of adolescent learners.	RO	SO	O	VFO
36.	Professional development helps teachers understand appropriate instructional strategies for adolescent learners.	RO	SO	O	VFO
37.	Students are assigned worksheets.	RO	SO	O	VFO
38.	General education and special education teachers participate in staff development together.	RO	SO	O	VFO
39.	Teachers increase learning by participating in professional learning networks such as study groups.	RO	SO	O	VFO
40.	Professional development is based on actual needs and concerns of the teachers.	RO	SO	O	VFO
41.	Struggling students receive an extensive assortment of learning supports.	RO	SO	O	VFO
42.	Teachers lecture as students take notes.	RO	SO	O	VFO
43.	Tutoring is used to reach struggling students.	RO	SO	O	VFO
44.	Struggling students are given additional time and opportunities to succeed.	RO	SO	O	VFO
45.	Special education students receive instruction in a separate classroom.	RO	SO	O	VFO
46.	Teachers have high expectations for all students.	RO	SO	O	VFO
47.	Teacher training focuses on interdisciplinary teaming practices.	RO	SO	O	VFO
48.	Teachers use small groups for instruction.	RO	SO	O	VFO