Impact of Scheduling Configurations on Social Studies Achievement

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Abstract

The study looked at the impact of scheduling configurations on middle-level social studies student achievement. Results of South Carolina's accountability assessment system's social studies mean test scores, at the school level, from seventh grade students in 117 schools as well as a survey completed by the principals of those schools were analyzed. After adjusting for poverty, the highest mean score for all demographic groups was for those using the 61-79 minute block all year configuration. However, there was no statistically significant difference found between scheduling configurations used and social studies accountability test results. Findings do show a statistically significant difference between scheduling configurations used and principals' perceptions of students' preparedness for the next grade level in social studies.

Keywords*:* social studies instruction, scheduling configurations, middle level education, testing

Many teachers and administrators are still struggling with how the content area of social studies fits into the educational transparency and accountability world created by the *No Child Left Behind Act* (NCLB, 2002) and continuing with the *Every Child Succeeds Act* (ESSA, 2015). With the focus on reading/language arts and mathematics, this national legislation does not mandate standardized testing in social studies nor does it include social studies in its school performance calculations. Because of this, the legislation has had a dramatic impact on social studies instruction.

Past studies show the pressure to focus on the heavily tested subjects of reading/language arts and mathematics impacts both the schedule (i.e., time allocated to instruction) and the actual amount of time spent teaching social studies (Abrams, Pedulla, & Madaus, 2003; Bailey, Shaw, & Hollifield, 2006; Burroughs, Groce, & Webeck, 2005; Center on Education Policy [CEP], 2005, 2006, 2007, 2008; Heafner, 2018; Holme, 2013; Houser, 1994; Houser, Krutka, Roberts, Pennington, & Coerver, 2017; Kavanagh & Fisher-ari, 2018; Leming, Ellington, & Schug, 2006; Lintner, 2006; O'Connor, Heafner, & Groce, 2007; Pace, 2012; Pederson, 2007; Savage, 2003; Vogler, 2003; Vogler & Virtue, 2007; Zamosky, 2008). Lintner (2006) found in a study of kindergarten through fifth-grade social studies in South Carolina that "with such a tremendous emphasis being placed on reading, writing, and math, social studies has to fight for instructional time" (p.3). Bailey, Shaw, & Hollifield (2006) determined that the actual amount of instructional time spent on social studies in Kindergarten-fifth-grade, self-contained classrooms in Title I schools in the state of Alabama confirmed the assault on social studies' instructional time reported by Lintner (2006). Bailey et al. (2006) also found that not only was the instructional time spent on social studies reduced in Alabama's elementary schools, but that the amount of time actually spent on social studies on average was far less than the amount of time allocated by the school district and mandated by the state. In fact, there were weeks in some schools when social studies was not taught at all (Bailey et al., 2006).

Manzo (2005) provides substantial evidence that social studies instructional time in elementary-level, middle-level, as well as low-performing schools has declined since the institution of the NCLB act. Researchers vonZastrow and Janc (2004) surveyed over 900 elementary-level and secondary-level principals across the United States and found that schools spent more time on and allocated more resources to instruction in reading and math than to social studies because of pressures to meet state and federal accountability mandates. Linking low-performing schools to schools with high minority populations, von Zastrow and Janc (2004) reported a sharp decline in instructional time and resources for social studies.

Additionally, studies have long shown that increased achievement and higher test scores are related to the amount of instructional time dedicated to a particular subject area (Berliner, 1990; Borg, 1980; Boscardin et al., 2005; Carroll, 1963; Clark & Linn, 2003; Coates, 2003; Denham & Lieberman, 1980; Fisher et al., 1980; Gettinger, 1984;

National Education Commission on Time and Learning, 1994; Nelson, 1990; Smith, 2000; Walberg, 1986; Wang, 1998; Wiley & Harnischfeger, 1974). Clearly, increasing the amount of instructional time is not only necessary to raise test scores, it is also necessary to provide the types of learning environments that are necessary to engage students in relevant educational learning activities. However, even if the goal is not to relate curricular content to students' lived world experiences (Aronson, Zimmerman & Carlos, 1998) students still need increased time to "master" challenging curriculum content that is aligned with state-mandated standardized testing (Cotton, 1989, 2001; Jacobson, 1980; Slavin, 1994; Walberg, 1986).

The issue of time or opportunity to learn as a barrier to effective social studies instruction is significant particularly in struggling schools and particularly in states such as South Carolina where social studies is considered to be a "high-stakes" subject area and is tested as part of the state's accountability assessment system (Lintner, 2006). In these schools, instructional time is generally allocated in favor of reading/language arts and mathematics instruction, such that it impacts the opportunities students are afforded to learn social studies and how prepared these students are in terms of basic knowledge and skills required for the state mandated accountability test (Bailey et al. 2006; Lintner, 2006).

It is not a stretch to conclude that scheduling configurations have the power to not only compromise a teacher's ability to provide time to ensure their students have an in-depth coverage of a subject such as social studies, but also their ability to provide the type of quality of instruction necessary for their students to learn the material and relate it to their lived worlds. Students need experiences that enable them to apply knowledge and see relationships between subjects to experience meaningful learning as well as assessments that are performance-based, all of which require adequate allocations of instructional time to achieve (Manning, 2000). These types of relevant connections to the skills and to other areas of the curriculum are essential to prepare elementary and middle-level students for future studies at the secondary-level (Abrams, Pedulla, & Madaus, 2003; Bloom, 1974; Carroll, 1963; Dewalt & Rodwell, 1988; Florian, 1999; Gettinger, 1984, 1985; Hirsch, 2006; Leming, Ellington, & Schug, 2006; Linn & Baker, 1993; Massachusetts 2020, 2009; NCSS, 2007; National Education Commission on Time and Learning, 1994; Pascopella, 2005; Pedulla et al., 2003; Slavin, 1994; Walberg, 1988). This is especially true in this era of high-stakes testing when developmentally-appropriate practices for students, particularly at the middle-level, are incongruent with the standards-based summative accountability expectations of academic rigor within content-discreet oriented curriculum and instruction (Anfara & Waks, 2001). Therefore, the challenge for today's middle-level educators is how to allocate, organize, and employ instruction time so that curriculum content and pedagogy can be aligned in ways that are integrated, relevant, exploratory, and engaging, while simultaneously enabling students do well on standardized state-sanctioned tests (Musoleno & White, 2010; Thompson, 2000).

South Carolina's Testing Program

Before the national education accountability legislation NCLB (2002) and its successor the ESSA (2015), the state legislature passed the South Carolina Education Accountability Act in 1998 which enacted a review process for evaluating K-12 schools in South Carolina (South Carolina Department of Education, 2009). The primary instrument for measuring student progress according to this law was the Palmetto Achievement Challenge Test (PACT). In 1999 the PACT was first administered to students in grades 3-8 and scores were categorized as Advanced, Proficient, Basic, or Below Basic. The tests first included only sections in mathematics and English, but in spring 2003 the assessment was expanded to include science and social studies. However, in spring 2007 the state cutback on its testing program and introduced the census testing of social studies and science in grades four and seven; This meant that only students in grades four and seven would be required to take both the social studies and science tests. For students in grades three, five, six, and eight, they would take either the social studies or science test but not both. In June 2008 the assessment system was renamed the Palmetto Assessment of State Standards (PASS). The only major difference between the PACT and the PASS was the categories used to report student scores. Whereas the PACT categorized student scores as Advanced, Proficient, Basic, or Below Basic, student scores on the PASS were to be reported as Exemplary, Met, or Not Met. Individual student scores on these tests would be used to help determine a ranking for the state's School Report Card that rates schools as Excellent, Good, Average, Below Average, and Unsatisfactory (South Carolina Department of Education, 2009). In 2014 the PASS was changed to the South Carolina Palmetto Assessment of State Standards (SCPASS).

At the time this study was conducted, the PASS was the state's testing program and the social studies portion consisted of 45 items for third grade up to 60 items for eighth grade. Each item was a 1-point, four-option, multiple-choice question aligned to the standards for that particular grade level (South Carolina Department of Education, 2009). In addition, the test contained 6 to 12 embedded field test items. These items were for test development purposes only and were not included in the calculation of student scores (South Carolina Department of Education, 2009).

Scheduling Configurations

Most states have laws that define the minimum number of days per year and hours per day that students must attend school. The minimum amount of instructional time is specified; however, the way time is allocated is not prescribed and thus enables schools to have considerable flexibility in scheduling based on prioritized instructional and non-instructional activities. The most commonly used configurations are the traditional schedule and the flexible schedule (Daniel, 2007).

Traditional schedules

Traditional schedules are those with "a fixed number of daily periods of uniform length, with delivery of instruction strictly adhering to departmental classifications" (Hackmann & Valentine, 2000, p. 6). Traditional schedules generally contain from five to ten instructional periods (Hackmann & Valentine, 2000).

Flexible schedules

Flexible schedules are those that are characterized by a shift from fixed-time instructional periods (e.g., 40-50 minutes) towards longer instructional periods (e.g., 75-150 minutes). These extended amounts of time within flexible schedules are often associated with inquiry or constructivist pedagogies rather than didactic lecture (Bevevino, Snodgrass, Adams, & Dengel, 1999; Daniel, 2007). The two most commonly used flexible scheduling configurations are known as block scheduling and alternate day class scheduling or what is referred to as the A/B schedule (Daniel, 2007).

Block scheduling. Block scheduling uses blocks of time created from combining instructional time allotted for a traditionally scheduled period (45-minutes) into two or more combined periods (Hackmann, 2002). This can include periods of all the same length (e.g., 90 minutes) or can adjust the length of time devoted to each time block according to the instructional needs of students (e.g., core academic subjects such as math and language arts may be assigned longer blocks of time while subjects not considered core or academic such as physical education and art may be assigned shorter blocks of time). The length of time of a block can also vary from day to day and week to week. Common block schedules in middle-level use what is referred to as a 4x4 (four-by-four) schedules where students take four classes for half an academic year and then four different classes the second half of the academic year (Daniel, 2007).

A/B scheduling. Flexible schedules may also utilize an alternating day schedule. In this arrangement, classes may be assigned to meet on an every-other-day basis with even-numbered and odd-numbered class periods meeting on alternating days (Hackmann, 2002). For example, students may attend one set of classes on certain days of the week and another set of classes on the remaining days.

Statement of the Problem

As mentioned earlier, the federally mandated NCLB and later ESSA legislation's focus on reading/language arts and mathematics testing outcomes has forced administrators and teachers to allocate more instructional time to these content areas at the expense of other content areas. However, states like South Carolina still include social studies as part of their accountability system and mandate scores in this content area to be included as part of a school's review. If South Carolina students are expected to score within a particular range in the area of social studies on the state's accountability test, in spite of the pressure and focus on reading/language arts and mathematics, it stands to reason that there needs to be a re-examination in the ways in which instructional time is allocated vis-à-vis scheduling configurations to teach these content areas. In addition, while the impact of accountability systems on social studies instruction at the elementary level has been extensively studied, few researchers have looked at its impact at the middle level. This type of research is needed to clarify the issues that prevent instruction time from being allocated to social studies at the middle level in equal measure with other high stakes tested disciplines and to uncover the concerns of school personnel in order to positively affect teaching and learning.

Research Questions

The present study adds to the body of knowledge regarding the impact of scheduling configurations on middle-level social studies student achievement. In South Carolina, the seventh-grade is the only middle-level grade in which all students must take the high-stakes, state-mandated accountability exam in the content area of social studies. Because of this, the research questions are as follows:

1. How do scheduling configurations affect seventh-grade social studies test scores on a state-mandated accountability test?
2. How do scheduling configurations impact seventh-grade students' achievement on the social studies portion of a state-mandated accountability test relative to gender and race/ethnicity?
3. What are middle-level principals' perceptions of scheduling configurations used for social studies instruction?

The article begins with a description of present study's method followed by an examination of the results of the research questions.

Method

The data to answer the research questions were obtained through: (1) an examination of archived 2009 PASS seventh-grade social studies achievement mean scores and Poverty Index data[1] and (2) the results of a survey instrument given to South Carolina middle-level principals designed to elicit information about the schedule configuration used at their schools and their perceptions regarding social studies instruction.[2]

Archived PASS and Poverty Index Data

The South Carolina State Department of Education (SCSDE) archival data set for the 2009 spring administration of the social studies seventh-grade PASS test (school level, aggregate data only) was used in the present study. The data set was accessed from SCDOE's PASS data website. In addition, Poverty Index data for 2009 was also retrieved from the SCDOE's data website archives. The Poverty Index data served as a covariate in the present study—to control for poverty.

Survey Instrument

A survey instrument was used to collect data on scheduling configurations and principals' perception data. The instrument asks for demographic information and includes 10 likert item questions. The validity of the survey instrument was previously established through a longitudinal study that began in 2003 (see Rock et al., 2006). Survey questions were developed by university social studies education professors and reviewed by preservice elementary-level and middle level education teachers, practicing teachers, and other university faculty. The questions were edited to improve clarity, reduce bias, and guarantee consistency in interpretation. Survey questions were pilot tested with 25 preservice and 25 practicing teachers. The questions were then redesigned to accommodate recommendations in order to insure the validity of the instrument. Permission to use the survey instrument and to modify questions for the present study was received from the developing researchers and the review board of the University of South Carolina. An internal consistent reliability analysis was used to assess the reliability of scores yielded by the survey instrument. Cronbach's alpha was used to assess score reliability of the survey instrument. The survey instrument had an alpha of .73, this is slightly above the .70 suggested as being indicative of adequate score reliability (Nunnally & Bernstein, 1994).

Sample

The target population for the study consisted of all traditional public middle-level schools in South Carolina that included the seventh grade and contained students who took the PASS social studies test in Spring 2009 as seventh-grade students (excluding charter schools and schools with multiple elementary and secondary grades). There were 210 schools in 73 school districts that met these criteria and they were contacted for possible participation in the present study. After contacting these schools and school districts, 117 schools representing 58 districts agreed to participate. Meaning, there was a 56% response rate from schools eligible to participate in the study and a 79% response rate from the eligible districts in the state. Schools participating in the present study are representative of the state in terms of percentage rural and urban and student characteristics of race, income, and past performance on state accountability assessments. According to Wallen & Fraenkel (2001), since the sample for the present study was large (N = 117) and represents more than half of the total number of schools in the population (56%), it is highly likely to be representative of the target population.

Limitations

The scope and applicability of the present study was limited to South Carolina public middle-level schools meeting the criteria for inclusion in this study and whose principal also completed the survey instrument. Only schools designated as public middle-level schools that contained grade seven were eligible for inclusion in the target population. Schools classified as charter schools and schools with multiple elementary and/or secondary grades were not included. Because South Carolina assesses social studies as a high-stakes test, results of the present study will have limited applicability in making generalizations about social studies achievement in states that either do not assess social studies or do not assess it at the middle-level as a high-stakes test.

Further, because the results of the present study considered scheduling configurations and achievement in social studies only at the seventh-grade, results could not be generalized beyond this grade level. Finally, because this study was an initial study, only how instruction time is scheduled over the course of a school year was considered. The analysis was limited to the most commonly used scheduling configurations.

Differences in how time was used within schedules, instructional strategies, teacher quality, faculty experience, training, skill in teaching social studies, or the amount of engaged learning time were not addressed.

Results

Two types of data were used to answer the research questions: (1) PASS social studies seventh-grade mean scores and Poverty Index data and: (2) instructional scheduling configuration and principals' perception data. The PASS and Poverty Index data were obtained through the SCDOE website; instructional scheduling configuration and perception data were collected through an administration of a survey sent to middle-level school principals in South Carolina.

Research Question 1

1. *How do scheduling configurations affect seventh-grade social studies test scores on a state-mandated accountability test?*

To answer this research question, the first step was to construct frequency distributions and to calculate the mean and standard deviation for each schedule configuration.

Table 1. Number of Schools, Percentage, Mean Score, and Standard Deviation by Schedule Configuration

Schedule Configuration	*N*	%	*M*	*SD*
Traditional 45-60 minute block all year	73	62.4	615.76	14.83
61-79 minute block all year	25	21.4	616.23	15.04
80-90 minute block all year	10	08.5	607.79	14.08
A/B 80-90 minute block all year	7	06.0	617.72	21.10
A/B 45-60 minute block all year	1	00.9	599.0	
Other	1	00.9	599.0	

As shown in Table 1, of the 117 responding schools, 73, or 62.4%, reported using a traditional 45-60 minute yearlong block instructional schedule in school year 2008-2009. Twenty-five schools (21.4%) reported using a 61-79 minute yearlong block instructional schedule. Ten schools, representing 8.5% of the census population, reported using an 80-90 minute yearlong block instructional schedule. Seven schools, representing 8.5% of the census population, used an A/B 80-90 minute yearlong block instructional schedule. The remaining two schools used either an A/B 45-60 minute yearlong block instructional schedule or another schedule configuration not identified. The lowest mean score (M = 599.00) was associated with the A/B 45-60 minute block all year schedule configuration. The highest mean score was associated with the A/B 80-90 minute block all year configuration (M = 617.72) followed by the 61-79 minute block all year schedule configuration.[3] The standard deviation for all schedule configuration groups indicated high levels of variation among the PASS social studies mean scores.

The next step was to run an ANCOVA (analysis of covariance) was used to compare schedule configurations to PASS social studies achievement (average mean) using a covariate (Poverty Index) to control for poverty level. Poverty has been identified by other researchers as a variable with potential to significantly impact achievement (Anderson, 1993; Bracey, 1999; Duncan, Brooks-Gunn, Klebanov, 1994; Farkas, 2006; Guo & Harris, 2000; Haycock, 2001; Lee & Burkam, 2002). However, results of the schedule configuration frequency distribution—namely, the unequal distribution of scheduling configurations—demanded a verification of the assumptions of an ANCOVA. Besides for making sure there were no univariate outliers or multivariate outliers detected after an examination of the data—which there were none—a basic assumption for an ANCOVA is equal group variance (Levene, 1960). Since the unequal distribution of scheduling configurations violated this assumption, the researchers ran Levene's Test of Equality of Error Variances to verify that an ANCOVA could be used. Results of the analysis showed the variance of PASS social studies test scores was equal across all scheduling configurations which indicated the ANCOVA assumptions had been met, $F(3, 111) = 1.163$, $p = .327$.

Table 2. Analysis of Covariance for Schedule Configuration as a Function of PASS Social Studies Test Scores, Using Poverty Level as a Covariate

Source	*df*	*MS*	*F*	*p*	eta^2
Poverty Level	1	14455.21	140.85	.000	.56
Schedule Configuration	3	38.38	.37	.772	.01
Error	110	102.63			

As shown in Table 2, an ANCOVA was used to assess whether using a particular instructional scheduling configuration improves PASS social studies test scores after controlling for differences in poverty level. Results indicate that after controlling for poverty, there is not a significant difference among scheduling configurations and PASS social studies test scores, $F(3, 110) = .36$, $p = .772$, partial $eta^2 = .01$.

Table 3. Unadjusted and Adjusted Schedule Configuration Means and Variability for PASS Social Studies Test Scores Using Poverty Level as a Covariate

		Unadjusted		Adjusted	
Schedule Configuration	*N*	*M*	*SD*	*M*	*SE*
Traditional 45-60 minute block all year	73	615.77	14.83	615.40	1.19
61-79 minute block all year	25	616.24	15.04	616.46	2.03
80-90 minute block all year	10	607.79	14.08	613.33	3.23
A/B 80-90 minute block all year	7	617.72	21.10	612.84	3.85

Table 3 presents the means and standard deviations for the four different instructional scheduling configurations on PASS social studies test scores before and after controlling for poverty. As is evident from this table, only minimal differences among scheduling configurations remain after poverty level is controlled.

Research Question 2

2. *How do scheduling configurations impact seventh-grade students' achievement on the social studies portion of a state-mandated accountability test relative to gender and race/ethnicity?*

The impact of gender and ethnicity on student achievement has been well documented in the literature (Holman, 1995; Kohlhass, Lin, & Chu, 2010; Thomas & Stockton, 2003).

Table 4. Adjusted Schedule Configuration Means and Standard Error for Male, Female, White, and Black PASS Social Studies Test Scores Using Poverty Level as a Covariate

		Male		Female		White		Black	
Schedule Config.	*N*	*M*	*SE*	*M*	*SE*	*M*	*SE*	*M*	*SE*
Traditional 45-60 minute block all year	73	618.65	1.32	612.15	1.19	625.88	1.65	599.32	1.26
61-79 minute block all year	25	619.15	2.25	613.45	2.04	629.51	2.93	600.64	2.09
80-90 minute block all year	10	615.59	3.60	611.64	3.66	620.64	5.30	598.77	3.75
A/B 80-90 minute block all year	7	616.10	4.28	608.70	4.12	623.60	5.60	593.60	4.24

Table 4 shows the frequency distribution, adjusted mean, and standard error of the four demographic variables (male/female and White/Black) across the four scheduling configurations after controlling for poverty.

A MANCOVA (multivariate analysis of covariance) was then used to determine if there was a significant effect on instructional scheduling that could be attributed to any of the demographic variables considered as a group. But, due to the results of the frequency distributions, a Box's Test of Equality of Covariance was needed to make sure MANCOVA's assumption of homogeneity of covariances across groups was not violated.

Results of Box's Test showed no significant differences among the covariance matrices of the four subgroups, which indicated the MANCOVA assumptions had been met (p = .166). Therefore, Wilks' Lambda multivariate significance test examined whether the four scheduling configurations differed on a linear combination of the dependent variables. The results showed no significance, Wilks' Lambda = .946, $F(99, 262) = 0.47$, p = .933, partial eta^2 = .02.

Research Question 3

3. *What are middle-level principals' perceptions of scheduling configurations used for social studies instruction?*

A survey instrument was used to answer the question. A cross tabulation was conducted between principals' perceptions of scheduling configurations used for social studies instruction and schedule configuration used at their school.[4]

Table 5. Cross-Tabulation for Schedule Configuration Used and Perception of Scheduling Configuration

	Perception of schedule configuration	
Schedule Configuration	% Excessive or Ideal	% Insufficient
Traditional 45-60 minute block all year	61.6	38.4
61-79 minute block all year	52.0	48.0
80-90 minute block all year	50.0	50.0
A/B 80-90 minute block all year	28.6	71.4

As shown in Table 5, 61.6% of principals using the traditional 45-60 minute all year schedule considered the configuration to be either excessive (more time is allocated than required to cover the content with more than appropriate depth) or ideal (enough time is allocated to cover the content with appropriate depth) while 38.4% of principals using the traditional 45-60 minute all year schedule indicated that the time allocated for social studies instruction was insufficient (not enough to provide adequate instruction).

Of principals in middle schools using the 61-79 minute all year schedule, 52% expressed the opinion that the schedule was excessive or ideal while 48% felt it was insufficient to provide adequate instruction. For the 80-90 minute block all year scheduling category, principals were spilt, 50% reporting the schedule was excessive or ideal and 50% saying the configuration was insufficient to provide adequate instruction. Additionally, for the A/B 80-90 minute block all year configuration, only 28.6% of principals using this schedule configuration felt it was either excessive or ideal while 71.4% considered it an insufficient configuration to provide adequate instruction. Overall, 63 (58.3%) principals expressed the opinion that the instructional time currently allocated for social studies instruction in their school was either excessive or ideal, with at least enough time to cover the content with appropriate depth. A chi-square test was conducted; results showed no significant relationship between the two variables, $X^2 = 3.37$, $df = 3$, $N = 115$, p = .336, phi = .17.

A cross tabulation was also conducted between principals' perceptions of student preparedness for next grade level in social studies (survey question #9) and schedule configuration used at their school.

Table 6. Cross-Tabulation for Schedule Configuration Used and Perception of Student Preparedness for Next Grade Level in Social Studies

	Perception of student preparedness		
Schedule Configuration	% Well	% Adequately	% Unprepared
Traditional 45-60 minute block all year	34.7	59.7	05.6
61-79 minute block all year	40.0	52.0	08.0
80-90 minute block all year	20.0	70.0	10.0
A/B 80-90 minute block all year	14.3	28.6	57.1

As shown in Table 6, 94.4% of principals using the traditional 45-60 minute block all year schedule considered their students to be either well or adequately prepared for the next grade level in social studies while 5.6% of principals considered their students to be unprepared.

Of principals using the 61-79 minute block all year schedule, 92% thought their students were either well or adequately prepared and 8% felt their students are unprepared for the next grade level. The results were also similar for principals using an 80-90 minute block all year configuration; 90% of these principals felt their students were either well or

adequately prepared for the next grade level in social studies. For principals using the A/B 80-90 minute block all year, the results were significantly different; only 42.9% of these principals considered their students to be either well or adequately prepared for the next grade level in social studies while 57.1% considered their students to be unprepared. A chi-square test was conducted; results showed a significant relationship between the two variables, $X^2 = 20.85$, $df = 6$, $N = 115$, $p = .002$, phi = .43.

Discussion

Research Question 1

How do scheduling configurations affect seventh-grade social studies test scores on a state-mandated accountability test? Results indicated there was no statistically significant effect for schedule configuration associated with PASS mean achievement. Therefore, the present study confirms the findings of numerous previous studies that also conclude there are no significant differences in student performance with regard to the scheduling configuration used at the school (Bateson, 1990; Cobb, Abate, & Baker, 1999; Duel, 1999; Lare, Jablonski, & Salvaterra, 2002; Lockwood, 1995; Snyder, 1997; Veal & Schreiber, 1999; Wild, 1998) and refutes findings of previous studies that either conclude block-scheduled students perform better on standardized tests than traditionally scheduled students (Evans, Tokarczyk, Rice, & McCray, 2002; Hess, Wronkovich, & Robinson, 1999; Payne & Jordan, 1996; Queen, Algozzine, & Eaddy, 1996) or traditionally scheduled students outperform block-scheduled students (Arnold, 2002; Gruber & Onwuegbuzie, 2001; Knight, DeLeon, & Smith, 1999; Lawrence & McPherson, 2000; Pisapia & Westfall, 1997).

Interestingly, of the six variations of schedule configurations analyzed, the schedule with the largest amount of instructional time (80-90 minute yearlong block schedule) had the second lowest achievement performance levels while the A/B 80-90 minute yearlong schedule and the 61-79 minute yearlong schedule had the highest performance levels. Additional, the A/B 45-60 minute yearlong schedule had the lowest performance level. While the research literature addressing the relationship of achievement and A/B flexible scheduling impacts is sparse with regard to middle-level high-stakes testing scenarios, the findings of the present study support those of similar studies (Gainey & Brucato, 1999; Lewis et al., 2003). Evidence that longer instructional periods fail to adequately support average attention spans or the retention of general knowledge in core areas (Gould, 2003) supports the present study's finding that the schedule with the greatest amount of instructional time allocated to social studies (80-90 minute yearlong block) has the lowest achievement levels of all schedule configuration types.

Research Question 2

How do scheduling configurations impact seventh-grade students' achievement on the social studies portion of a state-mandated accountability test relative to gender and race/ethnicity? Analysis showed the highest mean score for all demographic groups (male/female and White/Black) were for those using the 61-79 minute block all year configuration. However, no statistically significant differences in achievement levels by schedule configuration could be attributed to subgroup membership (i.e., gender and race/ethnicity). This result is inconsistent with general research findings that subgroup membership impacts achievement (Holman, 1995; Kohlhaas, Lin, & Chu, 2010; Nichols, Glass, & Berliner, 2006; Thomas & Stockton, 2003), and is inconsistent with the results of Holman's (1995) research that addressed state mandated high stakes accountability tests for race/ethnicity and SES.

Score variability may have something to do with the results of this study and it's inconsistencies with prior research. Data show the PASS mean scores proved surprisingly similar across the various master schedules despite large variations in schedule configurations and time allocations. Yet, an examination of the descriptive statistics revealed the presence of a high level of variability among the average performance level of schools using the same time allocation and schedule configuration model. The extreme variability of PASS mean scores of each configuration grouping (large differences in achievement means among schools in the grouping) represented by the large standard deviations (SD) may indicate that an important variable(s) may have not been accounted for or that among schools within each schedule configuration group, an effect may be present that has not yet been detected.

Research Question 3

What are middle-level principals' perceptions of scheduling configurations used for social studies instruction? Results revealed no statistically significant relationship between principals' perceptions of scheduling configurations used for social studies instruction and the schedule configuration used in their school. But, there was a statistically significant relationship found between principals' perceptions of student preparedness for next grade level in social studies and the schedule configuration used at their school. These results support findings of similar research focused on documenting principals' perceptions about the commitment of time and resources needed to teach social studies (Balls, 2008;

Bernhardt, 2004; Burroughs, 2002; Chang, 1992; Fedore, 2006; Fink & Resnick, 2001; Leming, Ellington, & Schug, 2006; Pedulla et al., 2003; Vogler, 2003; von Zastrow & Janc, 2004).

The finding of a statistically significant relationship between principals' perceptions of student preparedness for next grade level in social studies and the schedule configuration used at their school is very interesting to note because it provides yet another example of how acutely aware principals are of their students' needs (Balls, 2008; Bernhardt, 2004; Fedore, 2006; Fink & Resnick, 2001; Miller, 1981). The greatest percentage of principals who felt their students are unprepared for the next grade level in social studies are those whose schools are using an A/B 80-90 minute block all year schedule configuration. On the surface, this seems very confusing: As shown in Table 3, before controlling for poverty, the A/B 80-90 minute block all year schedule configuration, compared to all the other configurations (with the exception of the one school using an A/B 45-60 minute block all year), has the least amount instructional time devoted to social studies but produces the greatest PASS social studies test scores. In terms of efficiency and productivity, especially in today's climate of accountability, this schedule configuration would seem to be highly beneficial for schools to use. But, also shown in Table 3, once poverty is accounted for, the A/B 80-90 minute block all year schedule configuration has the lowest mean PASS social studies test score. In addition, as shown in Table 4, this configuration produces the lowest test scores for females and Black students and second lowest scores for male and White students in comparison to the other schedule configurations. Though the A/B block system was designed to provide flexibility for the individual instructional needs of students, still, the fact that students only meet every other day for a particular class in an A/B scheduling configuration, may, for some principals, mean less time for instructional reinforcement—and therefore less learning—than students may otherwise have received from a more traditional scheduling configuration where they meet every day.

Conclusion

The main question of the study addressed whether or not differences between scheduling configuration used and student performance on the state-mandated accountability test can be established. Secondarily, the researchers looked at middle-level principals' perception of scheduling configurations used for social studies instruction. The connection between the allocation of time, in terms of scheduling configuration, and learning is still not clear despite years of research on the topic (Cotton, 1989). Although this study found the highest mean score for all demographic groups (male/female and White/Black) were for those using the 61-79 minute block all year configuration, the relationship was not statistically significant. In fact, the extreme variability within scheduling configurations suggests that some may be more successful in advancing student achievement than others if variables—such as learning styles, experiences, and abilities of different student subgroups (i.e., those classified by gender or race/ethnicity)—are part of the elements considered. This is consistent with the findings of Cobb, Abate, and Baker, (1999), Kenney (2003), Rettig and Canady (1999), and Veal and Schreiber (1999).

In regards to principals' perception of scheduling configurations used for social studies instruction, results of this study suggest that there is no relationship between principals' perceptions of scheduling configurations used for social studies instruction and the schedule configuration used in their school, but an association was found between principals' perceptions of student preparedness for next grade level in social studies and the schedule configuration used at their school. The finding that there is no relationship between principals' perceptions of scheduling configurations used for social studies instruction and the schedule configuration used in their school supports previous research which maintains that the success of any schedule configuration, and particularly one that is a block scheduling model using longer than the traditional 45-60 minute class period, appears to depend more on the way it is implemented and the context in which it is used (Cobb, Abate, & Baker, 1999; Lewis et al., 2003) than on how the time is allocated and scheduled. With regards to the finding of an association between principals' perceptions of student preparedness for next grade level in social studies and the schedule configuration used at their school, this may be related to principals' general beliefs regarding curriculum and instruction, and/or it may be related to the study's sample. A sample with a more equal distribution of different scheduling configurations may clarify this finding.

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Footnotes

[1]The South Carolina Poverty Index is a calculation that ensures that student achievement among districts and schools across the state are being compared with districts and schools with similar student and demographic characteristics. The index is based on free and reduced-price lunch data and Medicaid eligibility data. It was developed in direct response to a mandate of the Code of Laws of South Carolina, Section 59-18-900(C) which required the state to set criteria for academic performance ratings and performance indicators and to establish guidelines for statistical analysis for data-reporting purposes.

[2]The survey instrument used in this study is available upon request from Kenneth Vogler, Department of Instruction and Teacher Education, University of South Carolina, Columbia, SC 29208. E-mail: kvogler@mailbox.sc.edu.

[3]Because the frequency analysis showed that only 1 school used an A/B 45-60 minute configuration and 1 school used an "other" configuration, these scheduling configurations were removed from further calculations.

[4]Response categories were "collapsed" to ensure the cell numbers sufficient to meet minimum requirements for a chi-square analysis.