Value of Scheduling-Related Inservice Education, Opportunity to Implement Effective Instructional Practices, and Performance of Block-Scheduled Learners in Agricultural Science: A Correlational Study

M. Craig Edwards
Gary E. Briers
Texas A&M University

Abstract

Student learning is an ultimate aim of education; teachers must be prepared to facilitate that learning. Preservice and inservice education provides teachers with skills and knowledge necessary to facilitate learning. Similarly, school climate and organization affects student learning. Block scheduling, an organizational tool adopted by many schools, has as its ultimate intent the improvement of student achievement. As an innovation, block scheduling must be understood and used by teachers as they organize instruction to enhance learning. However, to do these best, teachers must receive instruction themselves on how best to use block scheduling. Another factor also related to student achievement might be teacher satisfaction. Moreover, teacher satisfaction has been linked to school climate—with one piece of school climate being school-day schedule.

A primary purpose of this study was to examine relationships among teacher inservice in preparation for the school-day schedule—a block schedule, teacher satisfaction with the opportunity to implement effective teaching strategies (instructional practices), and their students' achievement. Twenty-two volunteer teachers and schools, representing two different school-day scheduling patterns, i.e., 12 Modified A/B Block scheduled schools with 189 students and 10 Nine-Week (4X4) Block scheduled schools with 136 students provided data for the study. Teachers completed a mailed questionnaire; each teacher administered an achievement examination to students in an animal science class taught by the teacher.

Findings were that the value of teachers' inservice education in preparation for their school-day schedule (i.e., a block schedule) was positively related to their satisfaction with opportunity to use effective instructional practices (teaching strategies). That is, as a teacher's rating of the value of their inservice preparation increased, so did their satisfaction with their opportunity to use effective teaching practices. Also, the value of teachers' inservice education in preparation for their school-day schedule was positively related to achievement of students in block-scheduled classes. So, as a teacher's value for their inservice preparation increased so did student achievement. This association was statistically significant and positive for lower-order thinking skills (LOTS), higher-order thinking skills (HOTS), and overall student achievement. Finally, teachers' satisfaction with opportunity to use effective instructional practices (teaching strategies) was positively related to achievement of students in block-scheduled classes. Therefore, as a teacher's satisfaction with opportunity to use effective instructional practices (under a block schedule) increased, so did their student's achievement. However, only in the case of HOTS achievement was the relationship statistically significant.

In the interest of improving achievement, teachers transitioning to a block schedule should receive inservice that supports the acquisition of teaching strategies identified as being effective when used under a block schedule.

Introduction and Theoretical Framework

If systematic and continuous improvement of student learning is an ultimate aim of education, then inservice education of teachers should prepare them to use effective instructional practices. Numerous researchers (Birman, Desimone, Porter, & Garet, 2000; Darling-Hammond & Falk, 1997; Darling-Hammond & McLaughlin, 1995; Hoyle, Steffy, & English, 1994) have supported this premise. Professional development might include assistance in developing teaching behaviors appropriate for an instructor's unique school setting. For example, if teachers are faced with professional challenges associated with changing their school-day schedule (e.g., to block scheduling), then inservice education can address their needs, and, assuming that new teaching behaviors are adopted and used properly, the ultimate result should be improved student achievement.

The transition to block scheduling is a reform that many teachers have undergone (Cawelti, 1997). The Modified A/B (Alternating Day) Block Schedule and the Nine-Week Accelerated (4X4) Semester Block Schedule are two principal patterns (Canady & Rettig, 1995). (On the Modified A/B Block Schedule, the school day is divided into four instructional blocks of approximately 90 minutes each. Students alternate class attendance between "A" day and "B" day classes, and they may be simultaneously enrolled for as many as eight different courses. On this schedule, most courses meet on alternate days for an 18-week semester. Conversely, on the Nine-Week Block Schedule, the school day is also divided into four instructional blocks of approximately 90 minutes each, but students attend the same four classes each day for one nine-week period.)

In the context of using time within a school-day schedule and how scheduling modifications can lead to improved teaching, DiRocco (1998/1999) asserted, "Intensive schedules [i.e., block scheduling] can be a powerful catalyst for change and for improved instruction in our secondary schools when implemented properly" (p. 83). Yet, Shortt and Thayer (1995) maintained that during this process of transformation the "behaviors that affect student learning and teacher behaviors need to be monitored and assessed so that adjustments can be made to maximize success for both teachers and students" (p. 61). Further, these researchers concluded: "How time is used in the classroom and what the relationship may be between classroom instructional time and learning are two variables that need additional study to determine the correlation between time and student achievement as they relate to block scheduling" (1998/1999, p. 81).

To date, investigators (Cobb, Abate, & Baker, 1999; Edwards & Briers, 1999; Louden, 1997; North Carolina Department of Public Instruction, 1996; York, 1997) who have examined effects of block scheduling on student achievement have produced ambivalent results. Researchers (Cobb et al., 1999; Edwards & Briers, 1999) have suggested that to further understand this phenomenon, there is a need to contrast different block schedules (e.g., alternating day formats versus nine-week 4X4 semester schedules) and to determine if there are variations related to differences in student performance.

However, perhaps inherent to the premise that significant gains in student learning can be realized are the behaviors of the teacher (i.e., instructional practices/teaching strategies) in the context of a reconfigured learning resource—a block-scheduled class. Further, how significant is the professional development that teachers receive to effectively implement teaching behaviors made possible by their schedule? That is, as a result of inservice, can teachers use instructional practices that enhance learner performance, including student gains in critical and higher-order thinking skills (Durkin, 1997; Kruse & Kruse, 1995; Lasley, 1998; Rettig & Canady, 1996; Shortt & Thayer, 1995; Watson, 1998). Shortt and Thayer (1995) stated that "any major change in a high school requires education of the faculty" (p. 60). Moreover, they maintained, "If block scheduling is to continue to provide unrestricted opportunities for students and teachers, opportunities must also be made available for teachers to grow professionally and sharpen teaching skills" (p. 60). Other researchers (Center for Applied Research and Education Improvement, 1995; Hackman, 1995; Irshmer, 1996) have echoed similar contentions—that for teachers to skillfully use a restructured school-day so that instructional practices associated with increased student performance can be planned, actualized, and assessed, related professional development must be carried out.

Moreover, is teacher satisfaction a fundamental component of the teaching-learning "equation"—one that cannot be overlooked? Hoyle et al. (1994) contend that the significance of satisfaction as it relates to work roles and work motivation, for example, psychological and hygienic "motivators" (satisfiers) and "dissatisfiers" identified by Herzberg and others, has been well documented. Researchers in agricultural education (Cano & Miller, 1992; Castillo & Cano, 1999a; Castillo & Cano, 1999b) have used the Motivator-Hygiene Theory as a basis for describing and exploring variables related to the "job satisfaction" of secondary-level agriculture teachers. However, Castillo and Cano (1999a) stated that "the relationship between level of…achievement of agricultural education students and their teacher's level of job satisfaction has not been explored" (p. 75). These investigators recommended that this association be examined.

Other theorists (Hoy & Miskel, 1991; Hoyle et al., 1994) have linked the phenomenon of teacher satisfaction to that of "school climate." Hoy and Miskel (1991) defined school climate as "a relatively enduring quality of the school environment that is experienced by participants, affects their behavior, and is based on their collective perceptions of behavior in schools" (p. 221). Buckman, King, and Ryan (1995) concluded that qualities comprising school climate, for example, "openness, trust, communication, and support shared by teachers," were "factors that encourage[d] learning for students and job satisfaction and improved performance for teachers" (p. 14). Yet, Hoyle et al. (1994) concluded, "In spite of the tremendous amount of energy expended by researchers of school climate, the exact effect of school climate on student achievement has yet to be determined" (p. 19). However, Hoy and Miskel (1991) identified "formal organization" (p. 221) as a significant variable influencing a school's climate. Arguably, school day schedule is a fundamental part of any school setting.

Assuming relevant inservice is provided, will teachers' perceptions of "value" for that inservice be related to their satisfaction with subsequent opportunity to implement new, different, or modified teaching strategies? Further, is there an association between instructors' perceived value of professional development preparing them to teach on a block schedule and subsequent achievement of their students? Finally, if teachers are "satisfied" with their school day schedule and feel satisfactorily prepared through inservice education to use effective

instructional practices supported by their schedule, will student performance improve? See Figure 1.

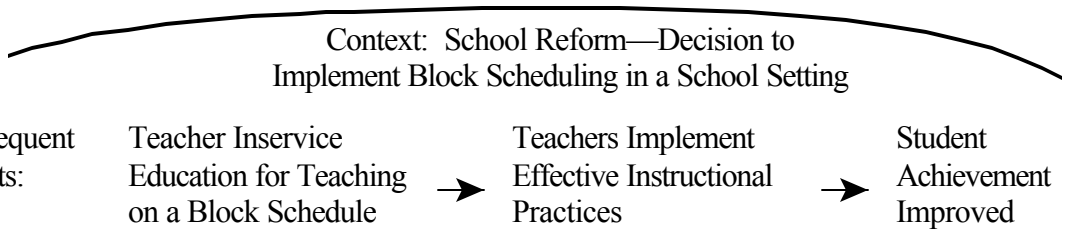

Figure 1. Conceptual framework for school reform under block scheduling.

Purposes and Research Hypotheses

One purpose of the study was to describe selected characteristics of teachers and students in a secondary-level agriscience course (animal science) on a block-scheduled school day. Another purpose was to examine relationships among teacher inservice in preparation for the school-day schedule, teacher satisfaction with the opportunity to implement effective teaching strategies (instructional practices), and their students' achievement. The following research hypotheses were tested to accomplish this purpose:

H_1: The value of teachers' inservice education in preparation for their school-day schedule (block schedule) is positively related to their satisfaction with opportunity to use effective instructional practices (teaching strategies).

H_2: The value of teachers' inservice education in preparation for their school-day schedule is positively related to achievement of students in block-scheduled classes.

H_3: Teachers' satisfaction with opportunity to use effective instructional practices is positively related to achievement of students in block-scheduled classes.

Methods and Procedures

This was an ex post facto, descriptive-correlational study. The target population consisted of instructors teaching and students enrolled in the agriscience course Animal Science (AGSC 332) in Texas public schools during the fall of 1998. Schools that had offered/taught the course Animal Science (AGSC 332) for the school years 1996-97 and 1997-98 ($n = 388$) were obtained from the Texas Education Agency and served as the sampling frame. The responding sample consisted of 22 volunteer teachers and schools, representing two different school-day scheduling patterns, i.e., 12 Modified A/B Block scheduled schools with 189 students and 10 Nine-Week (4X4) Block scheduled schools with 136 students. A form of cluster sampling (Gall, Borg, & Gall, 1996) was used. That is, the experimental units were the individual agriscience classes and teachers, but individual students were the sampling units within an agriscience class. Because the data for this study were provided by a volunteer sample, the results are generalizable only to subsequent similar volunteer samples. An alpha level of .05 was used.

Teachers responded to a questionnaire with items describing themselves and their schools; one of the items asked teachers to rate the value of inservice education in which they

had participated to prepare them to teach on their current school-day schedule. Responses ranged from "1," indicating "no inservice was provided" to "5," indicating that inservice education was "very valuable." Part two of the questionnaire included seven items about instructional practices conducive to implementation under block scheduling and associated with improved student achievement. In each of the seven statements, teachers indicated their level of agreement concerning whether or not their block schedule had afforded them opportunities to use these instructional practices (Edwards, 1999). This portion of the instrument was developed using Kruse and Kruse (1995), Lasley (1998), Rettig and Canady (1996), Shortt and Thayer (1995), and Watson (1998). A resulting scale—an average of the seven items—was used to indicate teacher satisfaction with their school day schedule in terms of its providing them with opportunities to use "approved" instructional practices. So, a score of "1" indicated "high dissatisfaction," to "5," indicating high satisfaction. Cronbach's coefficient alpha reliability estimate for the seven items assessing teachers' satisfaction with opportunity to implement effective instructional practices was .96.

The students completed a two-part instrument. Part one consisted of selected demographic items, e.g., length of FFA membership. The second part was an end-of-course achievement examination. It was developed from recommended curriculum materials for the agriscience course Animal Science (AGSC 332) (Instructional Materials Service, n.d.). Three agricultural educators—a curriculum specialist, a classroom teacher, and a measurement specialist, reviewed the items for clarity and content. The examination included 56 multiple-choice items and was divided into two scales based on the "levels of learning" model described by Newcomb and Trefz (1987). The two scales consisted of 23 lower- (remembering and processing) and 33 higher-order thinking skills items (creating and evaluating) (Edwards, 1999). Cronbach's coefficient alpha reliability estimates for the scales were .79 and .78, respectively. The overall student achievement scale (56 items) yielded a measure of internal consistency of .88.

A researcher-developed packet of teacher questionnaires, student questionnaires/ examinations, pre-coded scan sheets, and postage-paid return envelopes were mailed to participating teachers. Due to varying end-of-course dates, two general mailings were necessary. Teachers completed their questionnaires and administered the student questionnaires/exams at the same time. Student responses were coded so that they could be identified with their particular teacher and school-day schedule. Descriptive statistics were used to summarize selected teacher and student characteristics. For the research hypotheses, correlational statistics were used to examine relationships between variables. (See Figure 2.)

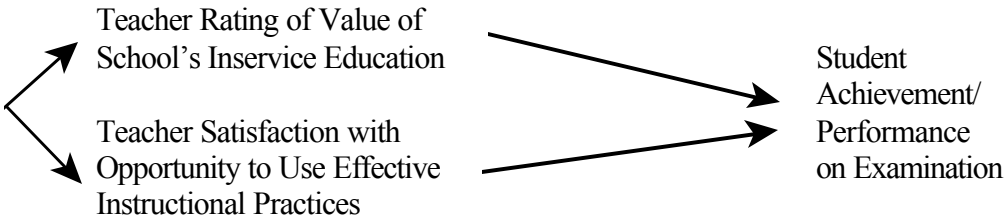

Figure 2. Model for examining relationships among value of inservice education, satisfaction with opportunity to use effective teaching practices, and student achievement.

Results and Findings

Slightly more than three-fourths of the teachers were male; nearly one-fourth were female. Concerning their education, half held only a bachelor's degree while the other half had earned a master's degree. Years of experience as an agriscience teacher showed 50 percent of the teachers having taught 12 or fewer years, and 50 percent indicating 13 or more years of service. When asked about years of service at their current school, nearly 60 percent replied that they had taught at their current school for 10 or fewer years, while slightly more than 40 percent indicated 11 or more years of service. Four-in-ten teachers had taught under two or fewer schedules, while nearly six-in-ten had experience teaching under three or more school-day scheduling patterns (Table 1).

Slightly more than one-half of the participating students were male and 46 percent were female (Table 2). Almost three-fourths of the students were Anglo, while one-fourth identified themselves as "People of Color." Slightly more than one-third had never been an FFA member, and approximately two-thirds had been members for one or more years. Nearly 70% indicated at least "some experience" with domesticated animals, while three-in-ten said they had "little" or no experience. Regarding high school grade classification, slightly more than three-in-ten of the students were twelfth graders, nearly four-in-ten were eleventh graders, one-fourth were in the tenth grade, and about one-in-twenty identified themselves as ninth graders (Table 2).

Table 1
Selected Characteristics of Instructors (N=22) Teaching Animal Science

Characteristic	9-Week Block n	Modified A/B Block n	Overall N	Overall %
Gender				
Male	7	10	17	77.3%
Female	3	2	5	22.7%
Highest Level of Education				
Bachelor's degree	4	7	11	50.0%
Master's degree	6	5	11	50.0%
Years Agriscience Teacher Experience				
1 – 12 years	7	4	11	50.0%
13 or more years	3	8	11	50.0%
Years of Service at Current School				
1 – 10 years	7	6	13	59.1%
11 or more years	3	6	9	40.9%
Number of School-Day Scheduling Patterns Teacher Has Taught Under				
One	1	1	2	9.1%
Two	3	4	7	31.8%
Three or more	6	7	13	59.0%

Table 2
Selected Characteristics of Students (N=324) Enrolled in Animal Science

Characteristic	9-Week Block n	Modified A/B Block n	Overall N	Overall %
Gender				
Male	68	105	173	53.7%
Female	67	82	149	46.3%
Ethnicity				
Anglo (White Non Hispanic)	84	152	236	73.8%
People of Color	51	33	84	26.2%
FFA Membership				
Never	73	42	115	35.9%
Less than one year	24	35	59	18.4%
Two years	19	44	63	19.7%
Three years	15	48	63	19.7%
Four years	4	19	23	7.2%
Experience with Domestic Animals				
None	18	9	27	8.3%
Little experience	37	34	71	21.9%
Some experience	36	43	79	24.4%
Much experience	22	30	52	16.0%
Great experience	23	72	95	29.3%
High School Grade Classification				
12th grade	44	59	103	31.9%
11th grade	56	62	118	36.5%
10th grade	31	53	84	26.0%
9th grade	4	14	18	5.6%

Pearson product moment correlation coefficients were calculated to examine relationships among the value of teachers' inservice education in preparation for their school-day schedule, teachers' satisfaction with opportunity to use effective instructional practices (teaching strategies) under their school-day schedule, and student achievement.

There was a substantial relationship (Davis, 1971) between value of teachers' inservice education in preparation for their school-day schedule and satisfaction with opportunity to use effective instructional practices (teaching strategies) ($r = .63$). That is, as a teacher's rating of "value" increased for the professional development they had received preparing them to teach on a block schedule, the more "satisfied" they were with their opportunity to implement effective teaching strategies (Table 3).

Table 3
Relationship[1] of Value of Teachers' Inservice Education in Preparation for Their School-Day Schedule and Teachers' Satisfaction with Opportunity to Use Effective Instructional Practices (Teaching Strategies)

	Teachers' Satisfaction with Opportunity to Use Effective Instructional Practices
Value of Inservice Education	.63**

[1]Pearson Product Moment Correlation Coefficient
**$p < .01$.

Also, the relationship between value of teachers' inservice education in preparation for their school-day schedule and end-of-course student performance—lower-order thinking skills, higher-order thinking skills, and overall achievement (Table 4)—was examined. As a teacher's rating of value increased for the inservice education they had received in preparation to teach on a block schedule, the lower-order thinking skills (LOTS) achievement of their students improved ($r = .45$); the correlation indicated a moderate association. There was a substantial relationship between a teacher's rating of value for their inservice education and their students' performance on higher-order thinking skills (HOTS) achievement items ($r = .59$). As a teacher's rating of value increased, their students' HOTS achievement increased. A similar relationship was found between teacher's rating of value for their inservice education and their students' overall achievement ($r = .53$); the correlation indicated a substantial association. As a teacher's rating of value increased, their students' overall achievement improved.

Table 4
Relationship[1] of Value of Teachers' Inservice Education in Preparation for School-Day Schedule and Student Achievement

	Lower-Order Thinking Skills Achievement	Higher-Order Thinking Skills Achievement	Overall Achievement
Value of Inservice Education	.45*	.59**	.53**

[1]Pearson Product Moment Correlation Coefficient
*$p < .05$; **$p < .01$.

As shown in Table 5, there were moderate (Davis, 1971) relationships between teachers' satisfaction with opportunity to use effective instructional practices (teaching strategies) under their school-day schedule and student achievement. That is, as a teacher's satisfaction increased, their student's achievement improved. However, only the relationship between teachers'

satisfaction with opportunity to use effective instructional practices (teaching strategies) and higher-order thinking skills (HOTS) was found to be statistically significant.

Table 5
Relationship[1] of Teachers' Satisfaction with Opportunity to Use Effective Instructional Practices Under Their School-Day Schedule and Student Achievement

	Lower-Order Thinking Skills Achievement	Higher-Order Thinking Skills Achievement	Overall Achievement
Teachers' Satisfaction	.33	.38*	.36

[1]Pearson Product Moment Correlation Coefficient
*$p < .05$.

Conclusions, Implications, and Recommendations

Three-in-four teachers were male. Half held only a bachelor's degree while the other half had earned a master's degree. Half of the teachers had taught agriscience for 13 or more years. However, nearly 60 percent had 10 or fewer years of service at their current school. Forty percent had taught under two or fewer schedules, while almost 60 percent had taught under three or more patterns (Table 1). Student gender was nearly evenly divided. Anglos comprised almost 75 percent of the sample. Approximately two-thirds had been FFA members for one or more years. Nearly 70 percent indicated at least "some experience" with domesticated animals, while the remainder reported "little" or no experience. Seven-in-ten were either eleventh or twelfth graders, and the remainder were either ninth or tenth graders (Table 2).

The value of teachers' inservice education in preparation for their school-day schedule (i.e., a block schedule) was positively related to their satisfaction with opportunity to use effective instructional practices (teaching strategies). That is, as a teacher's rating of the value of their inservice preparation increased, so did their satisfaction with their opportunity to use effective teaching practices (Table 3).

The value of teachers' inservice education in preparation for their school-day schedule was positively related to achievement of students in block-scheduled classes. So, as a teacher's value for their inservice preparation increased so did student achievement. This association was statistically significant and positive for lower-order thinking skills, higher-order thinking skills, and overall student achievement (Table 4).

Teachers' satisfaction with opportunity to use effective instructional practices (teaching strategies) was positively related to achievement of students in block-scheduled classes. Therefore, as a teacher's satisfaction with opportunity to use effective instructional practices (under a bock schedule) increased, so did their student's achievement. However, only in the case of higher-order thinking skills achievement was the relationship statistically significant (Table 5).

The findings of this study appear to support the premise that providing teachers with timely and relevant professional development is "essential" for successful school reform

(Birman, et al., 2000; Darling-Hammond & Falk, 1997; Darling-Hammond & McLaughlin, 1995; Hoyle et al., 1994). Further, if the reform targets change in school-day scheduling, for example, the implementation of a block schedule with the concomitant opportunities for instruction that has been linked with gains in student learning (see Figure 1), then inservice education to prepare teachers to perform in this "new" learning context should be provided. Other researchers have supported this conclusion (Durkin, 1997; Kruse & Kruse, 1995; Lasley, 1998; Rettig & Canady, 1996; Shortt & Thayer, 1995; Watson, 1998).

In a study involving biology teachers, Louden (1997) found that the amount of inservice and planning before implementing a block schedule pattern had a positive impact on the attitudes of teachers. Further, those teachers who did not receive inservice training or additional time to plan for the impending change to block scheduling, "seemed the least pleased with their schedule" (p. 105). Interestingly, this study found that agriscience teachers who reported the highest value for the inservice education they received in preparation for their change to a block schedule, reported the greatest satisfaction with their opportunity to implement effective teaching practices, and had students who achieved at a higher level.

Concerning the forces of school climate, its association with teacher satisfaction, and what this relationship may portend for affecting improvements in student learning, Hoyle et al. (1994) stated that "school climate may be one of the most important ingredients of a successful instructional program" (p. 15). Moreover, DeMoulin (Hoyle & Estes, 1993) posited that teachers who had a positive attitude about themselves and their professional roles were more apt to increase the quality of student learning and "were more willing to change procedures in striving for improvements" (p. 155). DeMoulin's contention supports a finding of this study--that the more "satisfied" teachers were regarding their opportunity to implement effective instruction (i.e., striving for improvements) the better their students performed, especially on learning tasks identified as higher-order thinking skills (Table 5).

Recommended for future practice and research are the following: 1) Teachers should be provided professional development that is "contextual" and "coherent" with school reforms (Birman et al., 2000), e.g., changes in school-day scheduling. 2) If it is anticipated that a change will create opportunities for modification of teaching behaviors, e.g., implementation of "new" or modified instructional practices associated with improved student achievement, then inservice education should be provided to assist teachers in acquiring and using these behaviors. 3) School climate factors that facilitate improved teacher satisfaction, especially as it relates to their instructional practice, should be identified, supported, and modeled (Buckman et al., 1995; Hoyle & Estes, 1993; Hoyle et al. 1994). 4) Recognizing the significant role that lower-order thinking skills can play in a student's ascent to higher cognitive behaviors, additional analyses should be conducted attempting to identify moderator variables and relationships that are associated with this level of learning. 5) Other researchers (Canady & Rettig, 1995) have suggested that there is a causal relationship between the use of block scheduling and an improvement in school climate (i.e., classroom environment); further, they discuss the important role that "climate" can play in the behaviors of students and teachers (Hoyle et al., 1994; Kruse & Kruse, 1995). So, additional research should be performed to investigate how other factors comprising a school's "climate" (e.g., conditions affecting student satisfaction) may be positively influenced by a change in school-day schedule. 6) Instructors teaching on different block schedule formats may be using various teaching behaviors that are related to their

students' achievement. For this reason, further research, e.g., case studies or other qualitative methodologies, should be conducted describing their instructional behaviors.

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Value of Scheduling-Related Inservice Education, Opportunity to Implement Effective Instructional Practices, and Performance of Block-Scheduled Learners in Agricultural Science: A Correlational Study

A Critique

William L. Thuemmel
University of Massachusetts

This quantitative study of the relationships among teacher in-service education in preparation for block-scheduling, teacher satisfaction with the opportunity to implement effective teaching strategies, and student achievement is a sequel to one presented a year ago by the same researchers. Like their previous study, this research was conducted in Texas; was well designed and implemented, and was as complex as its title. The introduction and theoretical framework for this study was prepared in a comprehensive and cogent manner. The review of literature was extensive and well-balanced in supporting the conceptual framework. Perhaps with the possible exception of using the word "in-service" as a noun instead of an adjective, this was a well written paper.

The purpose of the study and the three enabling research hypotheses were thoughtfully conceptualized and clearly stated. The methods and procedures used to conduct this ex post facto, descriptive-correlational study were appropriate. The target population (n=388) consisted of instructors teaching and students enrolled in Animal Science, an agriscience course offered in Texas public schools during fall 1998. The responding sample involved 22 volunteer teachers and schools representing two different school-day scheduling patterns (21 Modified A/B Block scheduled schools with 136 students and 10 Nine-Week Block scheduled schools with 136 students). The researchers were careful to note that because the data "were provided by a volunteer sample, the results are generalizable only to subsequent similar volunteer samples." Reliability scores were established both for teacher and student questionnaires; instruments were validated.

The conclusions, implications, and recommendations were supported by the findings. Positive relationships were concluded for the following: (a) the value of teachers' in-service education in preparation for their school-day schedule (i.e., block schedule) and their satisfaction with opportunity to use effective instructional practices; (b) the value of teachers' in-service education in preparation for their school-day schedule and achievement of students in block-scheduled classes; and (c) teachers'satisfaction with opportunity to use effective instructional practices and achievement of students in block-scheduled classes. However, only the higher-order thinking skills (HOTS) achievement portion of the previous relationship was statistically significant. What explanation do the researchers have for HOTS being significant, but LOTS (lower order thinking skills) not? Did the researchers find any differences between the three positive relationships when respondents were clustered by kind of block schedule (Modified A/B versus Nine-Week)? A primary implication from this study is that providing teachers with timely and relevant professional development is a necessary condition for successful school reform and that in-service development must be consistent and coordinated with that reform. Commendations are due the researchers for another fine study.