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Block Scheduling: More Benefits than Challenges. Response to Thomas (2001)

Michael D. Rettig and Robert Lynn Canady

Far from a failed experiment in time management, block scheduling is being adapted in various ways by schools nationwide to suit students’ needs. This article reviews research on scheduling effects and discusses how instructional leaders have approached the issue to analyze the benefits and problems of the various scheduling formats.

If the number of phone calls to our offices from nervous school administrators, worried teachers, concerned parents, and story-seeking reporters is any indication, the controversy surrounding block scheduling has cooled from its height of five or six years ago. To be sure, there are still schools around the country embroiled in deliberations as to whether or not to “go on the block,” but these discussions are not nearly as rancorous as in the past because there are so many examples of schools that have implemented some form of block scheduling successfully. When study teams read the available research, visit these schools, and talk with teachers, students, and parents, most of their questions are answered and fears are assuaged. Certainly, they discover that there are problems and issues with block schedules just as there are with all schedules, but the preponderance of evidence, both anecdotal and empirical, is positive.

Staying Power

The persistence of block scheduling in the schools that have implemented it is one gauge of the acceptance it has achieved. Although Thomas (2001) argues that “some schools are quietly falling off the bandwagon, disheartened and discouraged” (74), beyond a few isolated cases there is little evidence that block-scheduled schools are returning to single-period formats. In the eight years that Rettig (2001) has surveyed high schools in Virginia (1994–1995 through 2001–2002), only 3 of the 231 schools to implement a block schedule (1.3%) have returned to a single-period format. During the 2001–2002 school year, 228 of Virginia’s 301 high schools (75.7%) used some format of block schedule: 6 course A/B schedule (6 schools), 7 course A/B (89 schools), 8 course A/B (31 schools), 4 x 4 semester (97 schools), and other block (5 schools).

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Although few schools have dropped block scheduling altogether, several schools, particularly in Virginia, have changed block-scheduling formats during that time; for example, 9 schools migrated from an A/B schedule to the 4 × 4 semester plan, and 11 schools switched from the 4 × 4 plan to an A/B schedule. The changes from A/B schedules to the 4 × 4 semester schedule were spread over time; the decision to change to the A/B schedule from the 4 × 4 semester plan occurred mostly (8 of 11 times) at the end of the 1999–2000 school year as a reaction to Virginia’s high-stakes, end-of-course examinations and testing timetable that was perceived to be less favorable to the 4 × 4 schedule. Since that time, the testing timetable has been adjusted somewhat and schools also have learned to modify the 4 × 4 plan to their benefit.

Research Summary

Although some schools certainly have struggled with the implementation of block scheduling, and a few schools have returned to the single-period format, our review of the available research found considerable evidence in its support, including the following school climate effects:

- Survey results from dozens of studies indicated that the majority of administrators, teachers, students, and parents are positive about their school’s block schedule.

- At first there may be greater stress for teachers until they learn how to plan and teach in a longer block of time, but school eventually becomes less stressful for both teachers and students.

- There is evidence that the number of discipline referrals to the office is reduced by 25% to 35%. Evidence exists that in-school suspensions also decline.

- There is evidence that both student and teacher attendance improves, although the gains are small.

- For obvious reasons, student tardiness is also reduced.

In addition, a variety of “soft” academic data also supports the use of block scheduling:

- There is consistent evidence that students’ grades, as reported by grade point averages, increase and the number of students on the A–B Honor Roll increases.

- There is evidence that failure rates decline in schools using the 4 × 4 plan.

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1 Please refer to Canady and Rettig (2000) for a more detailed discussion and citations that support the points herein.
• There is evidence that students complete more courses in the 4 x 4 plan than in the A/B or single-period schedules.

• Graduation rates at least hold in block-scheduled schools, and there is evidence that graduation rates improve. Some data suggest that graduation rates are likely to increase more with the 4 x 4 plan than with the A/B plan.

The major remaining controversy still surrounding block scheduling is whether or not it will assist schools in their long-term efforts to increase student achievement on standardized tests. We are aware of only one large-scale study, which has attempted to compare achievement on national standardized tests among a variety of scheduling models (Pliska, Harmston, and Hackmann 2001). In this study, American College Test (ACT) scores for 38,089 students in 568 high schools in Iowa and Illinois were compared for schools operating eight-period, eight-block alternating day (A/B) schedules, and the 4 x 4 semester schedules. Differences in ACT scores were found to be negligible.

A second, earlier study compared achievement on North Carolina’s end-of-course examinations in algebra I, English, biology, U.S. history, and a course entitled “Economics, Legal, and Political Systems” for students in schools on single-period schedules (six or seven) and those in schools operating the 4 x 4 semester plan (North Carolina Department of Public Instruction 1997). The results of this study prompted the conclusion that “Overall students in block and nonblock schools have equivalent end-of-course test scores.” It should be noted that students in 4 x 4 schools, while attaining equivalent achievement on end-of-course tests, completed either one or two more courses than the students in six- or seven-period schedules. Consequently, in terms of efficiency, it may be argued that the 4 x 4 semester plan is a superior schedule.

Critics of block scheduling in the United States have cited several Canadian studies that compared student performance on provincial assessments in semester versus yearlong courses (not A/B; see, e.g., Bateson 1990; Gore 1996; Raphael, Wahlstrom, and McLean 1986). Critics of these studies point out the difficulties inherent in this kind of research. For example, in the Bateson (1990) study, mean raw scores on a 40-item, multiple-choice test in science favored full-year science students (22.1/40) over both fall semester science students (20.6/40) and spring semester science students (21.1/40). Many, including Kramer (1997) and Canady and Rettig (2000), question the educational significance of the small differences in achievement discovered because the test was administered in May and the testing timetable favored students in yearlong classes. Students who had completed the class during the fall semester took the exam nearly a full semester after completing the course. Spring semester students missed two days of instruction for every one day missed by full-year students. The testing time frame itself could have had an effect on the results.
In addition, in North Carolina, it was discovered that schools that had adopted the 4 x 4 semester schedule served a population that had both a lower socioeconomic status (SES) and lower test scores prior to implementing the block schedule (North Carolina Department of Public Instruction 1997). Consequently, it would be inappropriate to compare block and non-block populations without controlling for these factors. The North Carolina researchers used “parents’ educational level” as reported by the tested students and the schools’ preblock test performance to control for the differences in population. In the Iowa and Illinois study (Pliska, Harmston, and Hackmann 2001), researchers used a database of lifestyle factors related to parental educational level, geographic area, ethnic mix, and SES to control for population differences. Bateson’s (1990) study analyzed a variety of demographic factors, including future course plans in science, whether students have and use a computer at home, and future educational plans. No differences were found among the differently scheduled groups on these factors, so it was assumed that the comparison groups were similar. Critics question the use of these variables as proxies for SES; very few people owned a computer in 1986, rendering this information useless for control purposes.

At this time we believe that we can be fairly safe in stating that block scheduling will not have a negative effect on student achievement. Based on the research currently available, we also cannot say that it will necessarily improve achievement either. Principals across the country may object to this statement because school by school they have reported increased test scores and have attributed the rise at least in part to the new schedule. One has to ask, if test scores were on the decline in schools with block schedules, would teachers, superintendents, parents, and school boards allow them to keep using the schedule, as has been reported?

For a variety of reasons, it is difficult to conduct large-scale research (involving hundreds of schools and thousands of students) on the academic results of block scheduling. First, because different populations are more likely to adopt different scheduling models, it is important to be able to control for this volunteer effect. Finding a valid and reliable controlling variable, however, is problematic. In elementary schools, and to a lesser extent middle schools, researchers could use the percentage of students who are eligible for the free or reduced price lunch program. In high schools, the percentage of students who actually apply for this benefit varies greatly based on the established norms of the local community (i.e., schools with similar poverty rates may have dramatically different free and reduced price lunch rates). If feeder patterns of elementary and middle schools into high school were clean, researchers could extrapolate SES, but this is not true in many cases. Perhaps the best control available in any of the studies mentioned above is preblock test performance, but often these data are
unavailable. A second problem with the research is that the adoption of a block schedule typically is part of a larger school improvement effort with many other programs or policies being simultaneously implemented. How, then, do researchers control for these additional innovations or attribute whatever benefits or problems occur to “the block?” A third problem involves the faithfulness of implementation: Is a 4 x 4 schedule that was designed on a whim by an inept principal over the summer and sprung upon the faculty on their return in August really what was intended by the proponents of block scheduling? Just as there are both well-designed and poorly designed single-period schedules, there are well-designed and poorly designed block schedules. Finally, there is an increasing tendency to implement hybrid schedules, which are difficult to categorize when doing research. For example, it is advisable and fairly commonplace for schools that implement the 4 x 4 semester plan to adapt the schedule for a variety of circumstances by doubling course time in Advanced Placement (AP) or core classes such as algebra I or by having some classes meet every other day all year (e.g., music, physical education, journalism, etc.) while the majority of classes meet every day as semester block courses. How do researchers categorize these schools? For these reasons, Pliska, Harmston, and Hackmann (2001) understandably chose not to include hybrids in their analysis. An argument could be made that these hybrid schedules, adapted for specific needs, are the most responsive and sophisticated models and deserve close examination.

Perfecting the Schedule

There is no perfect school schedule. All high schools and middle schools, while more alike than not, have somewhat different needs and contexts. All school scheduling options, whether block or single-period, have pros, cons, and issues that must be addressed. A few examples: Some faculty, in schools operating on a six-period day with periods of 50 to 60 minutes in length, argue that the period length is excellent and that students benefit because two-thirds or more of their time is spent in core instruction (four or five out of six periods); however, this schedule is dying across the country because the increase in credits required for graduation forces a decline in students’ participation in electives when only six courses can be taken. Schools attempt to address the problem by offering “zero” period classes before school or “optional 7th period” classes after school or by running large summer school programs that permit students to complete requirements and thereby free up time for electives during the school year. Each of these adaptations has proven to be unsatisfactory. Consequently, in Virginia the number of six-period schools has dropped from 71 (25%) during the 1994–1995 school year to 12 (4%) for the 2001–2002 school year. Conversely, for years many schools in the Northeast have used an eight-period schedule...
with classes of 40–42 minutes, or even a nine-period schedule with periods of 36–40 minutes. These schedules obviously can accommodate a variety of students’ choices and elective programs. However, students often spend half or less of their school time on core courses (four or five out of eight or nine periods), which forces teachers to rely more on lectures as the primary means of instruction at the expense of more engaging strategies.

Block schedules, too, come with their share of concerns. Schools that use the 4 x 4 schedule, in which Carnegie unit courses are completed in 90 days in 80- to 90-minute classes, create a schedule with manageable workloads for both teachers (three courses per semester) and students (four courses per semester). Yet there are concerns that this does not give students enough time to study certain disciplines such as music, AP mathematics, foreign languages, and occasionally English or physical education. Although most of these concerns can be addressed by adapting the schedule (see Canady and Rettig 1995) or altering instruction (see Blaz 1998; Canady and Rettig 1995; Gilkey and Hunt 1998; Strzepek, Newton, and Walker 2000), they cannot be ignored. The popular eight-block, alternating-day schedule (8 A/B), while offering the benefit of longer blocks for instruction and reducing the daily load for teachers (three classes per day) and students (four classes per day), still requires teachers to address the instructional needs of six different classes of students all year long while students juggle eight courses. In the search for the perfect schedule, three issues bear attention.

Choice

The nationwide increase in graduation requirements already has begun to edge out elective programs, causing many school administrators across the country to search for ways to offer their students more scheduling slots for electives. In the search for more choice, administrators and their faculty members often consider a variety of scheduling options, in progression starting with seven-, eight-, and nine-period schedules, to the eight A/B, and finally the 4 x 4. Of course the 4 x 4, while offering many benefits, also raises the greatest number of concerns. Will retention of learning be negatively affected when students skip a semester? What about music classes, AP courses, transfer students, and state tests? (see Canady and Rettig 1995).

To the extent that school administrators and scheduling study teams can respond satisfactorily to these questions for teachers, students, and parents, the more likely they are to adopt a schedule that is predominantly the 4 x 4 semester plan. If the school community is still leery of some of the issues, the choice becomes an A/B schedule. Sometimes part of the impetus behind the implementation of a block schedule is the desire to offer more choice for students while still maintaining a positive school climate and a reasonable workload for teachers and students. As long as the school focuses
a great deal of professional development on appropriate instruction both before and during the implementation, the results can be satisfactory.

**Adaptability**

The standards movement and the accompanying increase in the use of high-stakes accountability assessments has put tremendous pressure on students and teachers. In many states such as Virginia, North Carolina, and New York, all students must pass rigorous examinations to graduate from high school. In Virginia, a school’s pass rate determines whether or not it will maintain state accreditation. One of the benefits of the standards movement is the renewed attention of schools on the learning of all students. Educators always have known that some students take longer to learn than others, yet schedules assumed they learned at the same rate. The amount that students learn has been permitted to vary while their time in class was kept constant. The standards movement has forced educators to reverse this equation; now the knowledge and skills gained must be held constant and the time to learn must be allowed to vary. Consequently, schools are searching for ways to provide students with additional learning time for remediation and instructional interventions.

Although we have developed scheduling adaptations for all formats, single-period and block, it has been our experience that schools are more innovative in their thinking when they begin with the $4 \times 4$ approach as their basic plan. For example, an A/B schedule can be “embedded” into the $4 \times 4$ schedule in one or more blocks to allow certain courses to be taught yearlong, most often music and AP courses, but occasionally for other classes such as PE, ROTC, journalism, or yearbook. In mathematics, algebra I part 1 and algebra I part 2, which are typically yearlong courses, can be scheduled as semester block courses, allowing students to finish both in one year. Several $4 \times 4$ schools have used a scheduling and curriculum adaptation called “Progressive Algebra” to allow acceleration and/or remediation for some students (see Rettig and Canady 1998). Other sequencing alternatives are possible in the $4 \times 4$. A four-year progression of a foreign language can be completed in two years. Therefore, advanced students could complete four years of two different languages. Students, not having taken algebra I in grade 8, are still able to complete calculus in high school.

**Teaching in the Block**

The ultimate success or failure of the block-scheduling movement will be decided by the degree to which teachers can use instructional strategies that will engage their students and promote a high level of learning. Since our earliest writings on this topic (Canady and Rettig 1995), we have argued that, “Regardless of a school’s time schedule, what happens between individ-
ual teachers and students in classrooms is still the most important, and simply altering the manner in which we schedule schools will not ensure better instruction by teachers or increased learning by students” (240). Thomas (2001) asserts, “Administrators [need to] understand their teachers’ teaching styles and carefully match them to the use of time in school schedules” (76). We respectfully disagree. We believe that teachers must discern their students’ learning styles and then design instruction accordingly. Over the years, students have amply demonstrated their intolerance for lecture as the primary means of instruction. Consequently, it is teachers, regardless of their subject and schedule, who must adjust instruction to their students. We also would challenge Thomas’s notion that it is not natural to teach certain subjects, such as mathematics or social studies, in blocks of time (76). Although we agree that students should not have to “listen to a...lecture or practice math for an hour and a half” (76), the instructional strategies employed by excellent teachers in these subjects are far more varied and engaging than this limited view of teaching. We argue that many instructional strategies recommended by research (see, e.g., Marzano, Pickering, and Pollock [2001]) can be implemented appropriately in all subjects in a block schedule. In fact, the implementation of a block schedule often is a catalyst that motivates a school to examine instructional practices and design professional development activities to improve teaching.

Block scheduling has not been, and never will be, a panacea for all that ails secondary schools. It can, however, be a powerful tool in the campaign to improve school climate, to provide more time to learn for those who need it, and to aid in the implementation of research-based instructional strategies.

References


