

Archived Information

2. MAKING TIME FOR TECH-PREP

The Problem

Most conventional school schedules are built around six or seven class periods per day, each of which lasts 45 to 50 minutes. Students typically attend each academic class every day. Such schedules leave little time for electives, including vocational classes, particularly as graduation requirements specify increasing portions of students' class load. Classes of 50 minutes are often too short to accommodate the kinds of hands-on exercises that are an important element of curricula in Tech-Prep programs or STW course sequences.

The Strategy: Block Scheduling

Many school districts, including several in the 10 Tech-Prep consortia examined in this study, have adopted "block scheduling." The school day is divided into four 90-minute periods, almost doubling the length of classes. Students attend classes on an alternating schedule. In some districts, this means attending classes on alternating days. In other districts, this may mean taking some courses intensively during the first semester and different courses during the second semester.

Advantages and Benefits

Block scheduling has several advantages relevant to Tech-Prep. It can:

- Improve conditions for interdisciplinary and team teaching
- Create more usable time for lab exercises and class projects
- Increase opportunities for students to take vocational technical classes
- Broaden the range of students who take hands-on technical classes
- Enhance the efficiency of the school day by reducing transition time between classes

Implementation Challenges

Longer class periods require adjustments by teachers and students. Traditional lecture and seat work routines are even less likely to sustain students' attention for 90 minutes than in shorter classes. Teachers must adopt and embrace more hands-on and cooperative learning styles as the basis for their classes, and districts must provide resources to help them do so. If block scheduling is expected to promote teacher teaming, time and training are needed for teachers to plan work together. As with any dramatic departure from tradition, a shift to block scheduling requires that support be built in advance among school staff and parents.

MAKING TIME FOR TECH-PREP

Class-scheduling challenges are a frequently cited problem in Tech-Prep implementation. Among the major barriers to the success of Tech-Prep that consortium coordinators named, scheduling problems ranked fourth (Silverberg and Hershey 1995).¹ Scheduling problems take several forms:

- ***Limited Time for Vocational Courses.*** In recent years, states have increased academic requirements for high school graduation, and competition for admission to four-year colleges creates added incentives to take advanced academic classes. For both reasons, students have less time for electives in general and, specifically, for vocational courses that are often central to the career focus of a Tech-Prep program.² College-bound students therefore often have little time for vocational courses; as a result, it remains difficult to counter impressions of vocational programs--and, thus, also of Tech-Prep--as being reserved for students who will not go on to postsecondary education.
- ***Inadequate Time for Hands-On Classroom Instruction.*** The Tech-Prep model emphasizes applied learning--making students more active participants in the classroom through projects, laboratory activities, and other problem-solving exercises involving real world-of-work tasks. Courses using an applied learning approach, including Applied Math or Principles of Technology, require time for students to plan, set up, conduct, and prepare reports on projects or experiments. The same is true of more traditional academic classes, such as chemistry or biology periods; activities in these science courses are often hard to fit into a 50-minute period.
- ***Difficulties Clustering Students in Academic Classes on the Basis of Career Interests.*** Some Tech-Prep programs are organized around career academies or clusters. Students who take the same vocational courses or have similar career interests are expected to take certain academic classes together, so that relevant career themes and skills can be woven into academic curricula. Because limited availability of class sections often produces scheduling conflicts for many such students, however, it is difficult to create career-clustered academic classes.

¹Other obstacles most commonly mentioned by local coordinators included lack of resources, negative attitudes about Tech-Prep and vocational education, the lack of truly integrated curricula, and difficulties revising curricula.

²From 1982 to 1992, there was a 19 percent decline in the percentage of all high school credits earned in vocational courses and a 28 percent decline in the percentage of students who concentrated in a vocational program area (National Assessment of Vocational Education 1994).

BLOCK SCHEDULING

In recent years, increasing numbers of school districts have adopted an approach to scheduling classes known as “block scheduling.” In a typical block schedule, the school day is divided into four substantially longer class periods (usually lasting 90 minutes), instead of into seven or eight shorter periods. Block scheduling has several variants. Two distinct forms were observed in the Tech-Prep consortia in Arkansas and Alabama, each associated with a different approach to structuring students’ schedules:

1. ***Alternating Class Days.*** In Bentonville High School in Arkansas, the day consists of four 90-minute periods Monday through Thursday (Attachment 2.1).³ On Fridays, the day is divided into a traditional eight-period day. Students attend classes in certain subjects on Mondays and Wednesdays and other subjects on Tuesdays and Thursdays. On Fridays, they attend both sets of classes in shorter periods.
2. ***Alternating Semesters.*** In Dothan, Alabama, every day of the week is divided into four 96-minute blocks. Students take two core subjects every day in the first semester (for example, math and English) and the other two core subjects (for example, science and social studies) every day of the second semester. Foreign language, physical education, and electives are included in the remaining two blocks each day (see examples in Attachment 2.2).

ADVANTAGES AND BENEFITS

Block scheduling has some general advantages that can help address common long-standing concerns of many school districts, whether or not they are developing Tech-Prep programs. Some features of block scheduling, however, are also particularly important to effective Tech-Prep implementation and can mitigate some Tech-Prep scheduling problems.

Reduce Administrative Time. Since students have only four classes each day, less time is spent taking attendance and making start-of-class announcements. Students have to “settle in” to class only four times a day, instead of six or seven. Because less time is taken up with movement from class to class, a higher percentage of school time can be devoted to instruction. Block scheduling may also reduce

³The third period is defined as lasting 135 minutes; it includes three lunch shifts, however, so actual class time is 90 minutes.

associated problems; for example, the Dothan principal reported a drop in disciplinary problems attributed to the reduction in hall time.

Accommodate Hands-On and Contextual Learning. Longer class periods lend themselves better than short ones to hands-on activities, such as laboratory experiments and group projects. Because the classrooms in which such activities occur usually must be used for different groups of students throughout the day, equipment must often be set up, used, and then disassembled and stored within each class period. For example, an applied biochemistry experiment may require setting up water supply connections, scales, and burners to test how certain chemical compounds affect the extraction of water vapor from air. The necessity of setting up and breaking down such an experiment in a 50-minute class period leaves little time for introduction or discussion. It may also cut the activity short just at the point when students are recording or organizing the data they have generated. Applied Math poses similar challenges. One exercise, for example, involves students in pacing off and timing standard distances outdoors to establish their walking speed, and then using that computed rate to estimate longer distances around their school campus. Such exercises, in a 50-minute period, may leave little time for in-class review and correction of problems. As they try to promote use of applied instruction, Tech-Prep coordinators commonly voice concerns about the limitations of traditional-length class periods. Class periods of 90 minutes mitigate these concerns in the same way as double class periods used in many vocational courses.

In addition, when Tech-Prep or STW programs involve students in work site and community-based learning activities, longer class periods can be helpful. A common arrangement is to have students spend occasional or regularly scheduled class periods in community or workplace activities as part of a regular school-based course. Students may be taken to a work site for job shadowing, or they may leave school early for volunteer work, a paid job, or work site training. When classes are organized in 90-minute periods, adequate time can be made for such off-campus activities without eroding students' time in multiple classes.

Expand Teacher Planning Time. Adequate course preparation time is a widespread concern; it takes on special importance with block scheduling, however, and is particularly important in Tech-Prep programs that are trying to encourage integration of academic and vocational instruction. In many schools using block schedules, including those in Dothan, teachers have three instruction periods per day and a class-length planning period. Keeping students attentive and engaged for 90 minutes is challenging and often requires that teachers pay even more careful attention to the sequencing and variety of classroom activities than was required in a traditional 50-minute period. Effective use of 90-minute instruction periods may therefore require more planning time, at least in the early stages after a block schedule is introduced. Longer class periods also present positive learning opportunities that can be exploited only with effective planning. For example, 90-minute periods lend themselves well to team teaching--such as a math and science teacher jointly developing and delivering units on genetics that include topics from biology and statistics. Team teaching can also involve academic and vocational teachers and promote integration objectives. When block scheduling makes more time for teachers to plan together, these objectives, central to Tech-Prep, can be met.

Increase and Broaden Participation in Vocational and Technical Programs. Block scheduling most often allows students to take more courses in a given year. As a result, enrollments in vocational and technical courses are likely to increase, because students have more elective periods to fill after scheduling classes to meet graduation requirements. Under the Dothan block schedule model, for example, students take eight courses per semester instead of the traditional six or seven. After block scheduling was introduced, enrollments doubled for courses in automotive technology, drafting and computer-aided design, cosmetology, health occupations, food preparation, masonry, welding, and advanced computer skills.

By allowing students more time for electives, and thus increasing the number who opt for vocational-technical courses, block scheduling can help make the population of vocational class students more heterogeneous. Before block scheduling was introduced in Dothan, vocational classes were commonly

viewed by college-bound students as appropriate for their special education classmates and others who had difficulties in demanding academic settings, but not for the. Increases in vocational course enrollment have occurred in large part because a broader mix of students is now participating. Students planning to attend four-year colleges are more inclined to take vocational courses under block scheduling, particularly courses such as accounting or business management; their increased participation in such courses can also enhance the overall image of vocational education.

IMPLEMENTATION CHALLENGES

The first hurdle in the way of block scheduling is the need to gain wide acceptance and support for its use. Substantial efforts may be needed to explain the concept and its advantages to faculty, students, and parents before block scheduling is introduced. In Dothan, for example, the district sent a committee of faculty and administrators to a Maryland district where block scheduling has been in use to talk to teachers and staff there about its merits, then brought a delegation from the same district to Dothan to explain block scheduling to a broader local audience. After extensive preparation and discussion, teachers were asked to vote on the schedule change; more than 95 percent supported the change, far more than the threshold of 70 to 80 percent that the district and principals had established as a precondition for implementation. With strong teacher support, a positive message could be conveyed to the community; in turn, parents also proved enthusiastic about the change.

Acceptance of the scheduling innovation, however, does not reduce the substantial challenge of promoting effective use of the longer class periods. The theoretical advantages of block scheduling cannot be realized unless teachers adopt teaching strategies that use all 90 minutes well. Ancillary advantages, such as improved prospects for team teaching or for student work site experiences, may not materialize unless staff members seize the opportunity. In the districts we observed, the importance of ensuring staff adjustment was realized, and staff development resources were built into implementation plans. Signs of how difficult the adjustment can be also have been evident, however. Some students praise block

scheduling because it allows them to focus their attention on fewer subjects each day (or each semester) and because it allows more time for group discussions and hands-on work in the classroom. Others, however, complain that some teachers have not yet been able to change their teaching style and simply lecture for 90 minutes; a few even asserted that some teachers use much of their extended class period as a study hall.

Special challenges may arise in districts that adopt a “semesterized” block schedule, in which students take one set of core academic classes intensively during the first semester and a different set during the second semester. Although it has not been reported in the consortia included in this evaluation, teachers in other states have noted a tendency for some students to put off what they consider harder courses until the second semester. Anecdotal teacher reports have noted that, when given leeway to do so, students (particularly at-risk students) may be inclined to choose “fun” electives the first semester, then find themselves faced with a combination of harder courses in the second semester. If students group math-oriented courses into one-half of the school year, another issue may arise; lack of use during the alternate semester may lead students to forget such skills, with summers exacerbating the problem.

Such reports underscore how important it is to create careful guidelines that limit students’ leeway in scheduling their classes and to have counselors monitor students’ choices. When the Dothan City Schools adopted their semesterized block schedule, they implemented a requirement that students take math and science in alternate semesters and, similarly, alternate English with social studies. Thus, each semester students are enrolled in one core course in which they exercise math-oriented skills and another core course that uses reading and writing skills.

ATTACHMENTS:

2.1 BENTONVILLE HIGH SCHOOL BLOCK SCHEDULE

2.2 SAMPLE FOUR YEAR PLANS UNDER BLOCK SCHEDULING IN DOTHAN