Schools should be reinvented around learning, not time.

State and local school boards should work with schools to redesign education so that time becomes a factor supporting learning, not a boundary marking its limits.

Schools should provide additional academic time by reclaiming the school day for academic instruction.

Teachers should be provided with the professional time and opportunities they need to do their jobs well [Sommerfield, 1994].

**PROBLEMS WITH HIGH SCHOOL SCHEDULES**

Increasingly, there is no typical high school schedule in the United States. Prior to the current “block scheduling” reform movement, however, schedules did have many commonalities. In general, schools operated with six, seven, eight, or sometimes even nine daily periods. Six-period schools operated classes somewhere between 50 and 60 minutes in length; seven-period schools had classes of 45 to 52 minutes; eight-period schools ran sessions of 40 to 48 minutes; and the few schools operating nine-period schedules generally had classes of 42 minutes or less. In six- and many seven-period schools, lunch was a separate, shorter session built around instructional periods. In nine-period, many eight-period, and some seven-period schools, lunch consumed one of the periods. In general, schools provide three to five minutes of passing time between classes.

Since the demise of the earlier “flexible modular” scheduling reform attempt of the '60s and '70s, it has repeatedly been reported in the literature that the traditional schedule did not support many of the changes that needed to be made in high schools across the country; in fact, it was often lamented that “the schedule was the problem!”

A variety of specific criticisms have been leveled against single-period models of high school scheduling in America. This next section will discuss these problems at length.
SINGLE-PERIOD SCHEDULES CONTRIBUTE TO THE IMPERSONAL NATURE OF HIGH SCHOOLS

It is doubtful that most adults could survive the impersonal, hectic pace expected of students in a typical single-period high school schedule. Imagine adults going to work each day and having to work for seven or more supervisors, often in eight or more workplaces, in seven or more areas of expertise. Carroll [1990] stated that "at no other time, whether at school or at work, is anyone placed in such an impersonalized, unproductive, frenetic environment" than in the typical high school [p. 365]. He also commented that we must question "whether the American high school is responding to the alleged innate, hyperactive characteristics of teenagers or exacerbating those characteristics" [p. 365].

Joining the attack on traditional high school schedules and their depersonalizing characteristics are teachers who contend that they cannot prepare adequately for and interact with the large number of students being assigned to them on a daily basis. Most teachers prepare for five or six different groups of students daily. If we assume class sizes of between 20 and 30, each high school teacher must instruct between 100 and 180 students daily. We ask the question: "Who among us can begin to understand and address the intellectual and emotional needs of 100 to 180 students every day?" Is it any wonder that high school teachers get a reputation for being "subject-centered?" Who, but Mother Teresa, could be "child-centered" under such circumstances? High school teachers are under tremendous stress simply trying to deal with the large number of students passing through their classrooms each day. As a result, many teachers report they are unable to teach using more effective, active learning methods; in the interest of survival, instructional compromises are made. As Ted Sizer [1984] argued, though, "Horace Smith should not have to compromise; he should be responsible for only 80 students at a time, not 120 or 150 or 175 as is common today in many public and parochial schools" [p. 197].

From a student's perspective, current schedules present an equally impersonal experience of schooling. We ask students to prepare for six, seven, or eight classes daily. We ask them to adapt to the teaching styles, academic expectations, and classroom management techniques of six, seven, or eight teachers every day.
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We ask students to change desks and chairs six, seven, or eight times a day. We ask students to adapt to different lighting and different heating and cooling systems six, seven, or eight times per day. We ask students to work with six, seven, or eight different groups of students daily. What teacher (or adult for that matter) would stand for such a system? Imagine changing offices (or classrooms), desks, chairs, computers, colleagues, and bosses six, seven, or eight times daily! The very idea is ludicrous.

SINGLE-PERIOD SCHEDULES EXACERBATE DISCIPLINE PROBLEMS IN HIGH SCHOOL

Nationwide concern regarding discipline and violence [Fulong & Morrison, 1994; National Educational Goals Panel, 1994] in schools has been an important aspect of the current critique of traditional high school scheduling practices. Traditional schedules create at least three situations which may result in an increase in school discipline problems.

Any assistant principal in charge of discipline will verify that a preponderance of disciplinary referrals emanate from scheduled transitions, when large numbers of students spill into the hallways, congregate in lunch rooms and commons areas, or are herded into locker rooms to change clothes for physical education classes. If students are not sent to the office directly from the transition area, whatever problem has occurred often carries over into the classroom, where the teacher must deal with it at the beginning of the period. While we realize that class changes and other transitions are a welcome release for students from the classroom, often this time is not well-supervised by staff. A reduction in the number of transitions during the school day nearly always has a positive effect on a school’s disciplinary climate.

In the previous section we discussed the assembly-line traditional period schedule and the manner in which it contributes to the depersonalizing nature of high schools. When teachers are responsible for 100 to 180 students daily, and students must answer to six, seven, or eight teachers a day, it is nearly impossible for them to develop close relationships. We know that students and teachers who know each other better are less likely to be disrespectful of each other when potentially explosive situations arise. Avoiding
unnecessary “in your face” challenges is a key aspect of school discipline. Perhaps if teachers saw fewer students, there would be a greater likelihood of improved student-teacher relations.

Short instructional periods may also contribute to a negative disciplinary climate. Teachers instructing in a 40- to 60-minute period feel powerful pressure to cover the curriculum—to get their lesson taught. When disciplinary situations arise in the classroom and the offending student does not respond immediately to a quick correction by the instructor, the typical reaction of many teachers is to send the student to the office. When only 40 to 60 minutes of instructional time are available, any time taken away from classwork is seen as unacceptable. In block classes, teachers report a greater willingness to ask the student in question to step out into the hall, give the class a question or some other assignment to focus on, and then spend a few minutes with the student discussing the issue in private.

**Single-Period Schedules and Increased Graduation Requirements Have Cut the “Time Pie” Very Thinly**

During the 1980s, graduation requirements in most states were increased. In some cases students were required to earn up to 24 units for their academic diploma, which became a major problem for students attending high schools operating under a six-period daily schedule. Such a schedule offered little room for any electives for large numbers of students; hence, enrollments in performing arts and vocational classes began to drop [Association for Supervision and Curriculum Development, 1985]. To address these issues, many high schools added periods within each school day simply by dividing the “time pie” differently. Generally, the total amount of time in the school day was not increased; in fact, in some states the school day was shortened during the late 70s and 80s! As a result of these actions, class periods in many high schools became shorter, and the school day became even more hectic and fragmented for both teachers and students. During 1994 we have worked in at least three states where high schools scheduled periods of just 40 minutes, which means teachers must “fight” to deliver even 25 or 30 minutes of instruction each class period. No wonder teachers begin to say, “All I do is direct traffic”! Imagine trying to complete a worthwhile science lab, conduct a Paideia seminar [Adler & Van Doren, 1984],
play a volleyball game, or teach an electronics class in a time period of 40 minutes!

Thus, in our attempt to satisfy expanded graduation requirements and still maintain student elective choice, we caused many students to become overwhelmed trying to adjust to eight or more teachers each day, multiple notebooks, homework assignments, and tests. In those schools in which additional periods were not added, students were often squeezed out of elective programs, such as music, vocational education, and fine arts, because there wasn't "room in the schedule" for those classes. A good description of the student in a traditional high school schedule was offered by Carroll: "Americans typically view teenagers as hyperactive, frenetic individuals who are difficult to understand. The American high school deals with this hyperactivity by placing teenagers in a state of perpetual motion and interrupted attention. Today, typical high school students are in seven different classes, a homeroom, and a cafeteria—nine different locations—in a 6½-hour day. In addition, if they have physical education, these young people may change clothes twice and shower once. This is certainly not a schedule that fosters deep reflection" [pp. 364-365].

**SINGLE PERIOD HIGH SCHOOL SCHEDULES LIMIT INSTRUCTIONAL POSSIBILITIES FOR TEACHERS**

Teachers have also played a significant role in promoting scheduling changes because, as many of them moved away from the lecture teaching format, they became frustrated with the single-period scheduled day and began to seek changes. Boyer [1983a] reported that "...the sense of the clock ticking is one of the most oppressive features of teaching" [p. 30].

The short single periods offered by most scheduling models limit flexibility in terms of the kinds of instructional strategies that can be accomplished. When teachers are faced with only 45 minutes, they often feel pressed to at least expose children to curriculum. The most efficient way to provide "exposure" to content is the lecture. Unfortunately, the lecture is probably not the most effective means for students to learn material. Often in our work with groups in the area of Cooperative Learning [Johnson & Johnson, 1987; Kagan, 1990; Slavin, 1990], high school and middle school teachers have
commented: “Yeah, cooperative learning is pretty good, but I don’t have time for it.” When teachers instruct in longer blocks, most are unable to lecture effectively for long periods of time and they may see the benefit of other instructional strategies.

Short instructional periods make the accomplishment of laboratory work very difficult. It is nearly impossible for science teachers to involve students in active experimentation in a 40- to 60-minute period. Setup and take-down reduce the available instructional time to such an extent that approximately 20 to 35 minutes is all that remains for classwork. Similarly, it is difficult to implement other creative teaching techniques in short time blocks, for example, Paideia seminars [Adler & Van Doren, 1984], simulations, and other creative models of teaching such as synectics, concept development, concept attainment, role-playing, and inquiry [Gunter, Estes, & Schwab, 1990; Joyce, 1992].

Current schedules also affect the manner in which curriculum is organized and delivered. Students traveling through the six-, seven-, or eight-period day are exposed to six, seven, or eight pieces of unconnected curriculum each day. They rarely if ever have time to study anything in depth. To each teacher in his or her discipline, work may make sense; but to students who receive a fragmented, piecemeal education, the relevance of their efforts is sometimes lost. Ted Sizer comments, “The subjects come at a student... in random order, a kaleidoscope of words: algebraic formulae to poetry to French verbs to Ping-Pong to War of the Spanish Succession, all before lunch. Students are to pick up these things. Tests measure whether the picking up has been successful” [p. 81].

**SINGLE-PERIOD SCHEDULES DO NOT PERMIT FLEXIBLE TIME FOR TEACHING AND LEARNING**

Perhaps the most critical (and unsolved) issue facing schools regarding the allocation of time is the indisputable fact that some students need more time to learn than others. Secondary schools’ reliance on the Carnegie Unit as a seat-time measure of credit has ensured that all students become “Prisoners of Time”:

High-ability students are forced to spend more time than they need on a curriculum developed for students of moderate ability.... Struggling students are forced to move
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with the class and receive less time than they need to master
the material. . . . [Average] students get caught in the time
trap as well. Conscientious teachers discover that the effort
to motivate the most capable and help those in difficulty
robs them of time for the rest of the class. [National
Education Commission on Time and Learning, 1994, p. 15]

High schools across the country experience this problem,
especially in late January. After the semester grades have been
 calculated, it becomes pointedly obvious to a number of students
that it will be mathematically impossible to pass for the year—
regardless of their performance during the second semester. These
students become behavior and attendance problems. They rarely
react positively to teachers' advice to "Work hard! It'll help you
next year" [Canady & Hotchkiss, 1989].

In a way, we have created a system to handle students who
need more time to learn and master course content and skills; we
grade students with an "F" and then require them to repeat the
course during summer school or the next academic year! This is
a punitive system for students who need more time to learn; it is
also an ineffective system for students whose problem is motivation.

On the other end of the spectrum, the possibilities for acceleration
in the American high school are very limited. In most districts there
is, however, one celebrated occasion for possible advancement. At
the end of 7th grade in middle and junior high schools throughout
the nation, a decision must be made as to whether or not a student
should enroll in algebra during the 8th grade. This decision
determines if it will be possible for a student to be accelerated in
mathematics and possibly take calculus in the senior year. If a student
takes algebra in 8th grade, the option remains open; if not, calculus
is ruled out in many high schools. We would argue that this is an
unreasonably inflexible system. Although the National Council
of Teachers of Mathematics recommends otherwise, math courses
prior to algebra predominately focus on arithmetic skills; therefore,
this decision must be made when instructors know more about
students' abilities in arithmetic than their abilities in mathematics.
If the school schedule were not as rigid, perhaps the decision to
accelerate could be made at different and more appropriate times
for students.

We need a more continuous K-16 approach to education in the
United States. All too often, we focus only on "high" school or "middle" school or "college" or "vocational" school. What is needed is a K-16 vision in which "tech-prep" [Bottoms, Presson, & Johnson, 1992], college prep, dual enrollment, and "work prep" are interwoven to provide opportunities for students. An ideal system would punish students neither for needing more time to learn nor for needing less time to learn. Several schedules presented later in this book begin to address this difficult issue.

**SINGLE-PERIOD SCHEDULES DO NOT RESULT IN USER-FRIENDLY WORKPLACES FOR TEACHERS**

Current high school schedules not only provide a frenetic, stressful environment for students, but also for teachers and administrators as well. How well can we expect teachers to prepare for lessons if they must plan for three, four, five, or sometimes even six lessons daily? How well can we expect teachers to know children, if they must work with 150 each day? How accurate and meaningful can we expect teachers' assessments of student progress to be when 150 grades must be computed? How realistic is it for schools to expect teachers to provide extra help for students who need more time to learn, when that time must come before school, after school, during lunch, or in lieu of a planning period? How reasonable is it to expect teachers to provide focused, connected learning experiences for students, when they have five "starts" a day? As class size [National Center for Education Statistics, 1993, p. 74] and accountability mandates [p. 149] have increased during the early '90s, how reasonable is it to ask teachers to meet the intellectual and emotional needs every student brings to the classroom, not to mention the paperwork? As our student population increases in diversity and we attempt to address their diverse needs in increasingly heterogenous classes, how reasonable is it to ask teachers and their students to continue on this treadmill? We would argue that it is not reasonable for schools to continue operating with schedules which may have made sense 90 years ago, but are now obsolete. We would argue, as has one teacher in Maine, that "The problem with our schools is not that they are not what they used to be, but that they are what they used to be" [National Education Commission on Time and Learning, 1994, p. 21].
GOALS OF THE HIGH SCHOOL SCHEDULING REFORM MOVEMENT

The upswell of criticism has sparked a nationwide review of high school scheduling practices and a search for models better able to meet the needs of teachers and students. This reform effort is attempting to create high school schedules which are designed to:

- Reduce the number of class changes and movements that large groups of students are required to complete during any one school day;
- Reduce the duplication and inefficiency reportedly documented in many high schools using the daily, single-period high school schedule;
- Reduce the number of students for and with whom teachers must prepare and interact each day and/or each term;
- Reduce the number of courses for which teachers must prepare each day and/or term;
- Reduce the number of classes, and the accompanying assignments, tests, and projects, that students must address during any one day or term;
- Reduce the fragmentation inherent in single-period schedules, a complaint that is especially pertinent to classes requiring extensive practice and laboratory work;
- Provide teachers with blocks of teaching time that allow and encourage the use of active teaching strategies and greater student involvement; and
- Allow students variable amounts of time for learning, without lowering standards, and without punishing those who need more or less time to learn.