

HORACE

"Schools equal their schedules," says one Coalition principal—yet the schedule is often the hardest thing in education to change. But teachers trying to build more depth and new learning styles into their courses find that the traditional time slots just don't work anymore.

Scheduling the Essential School

IMAGINE YOU HAVE A WEEK to accomplish a series of specific tasks, Bob McCarthy likes to say to the people who come to the scheduling workshops at the Coalition of Essential Schools, where he is Director for Schools. You're going to read *Zen and the Art of Motorcycle Maintenance* and discuss it with a few friends; you're going to repair the front steps; you're going to write a long letter to a friend you haven't seen in years; you have a few other projects large and small. How would you organize your week so as to get all these different things done?

Chances are, workshop participants tend to agree, the least useful way to start would be to divide up your days into 45-minute blocks, moving at rigid intervals from one task to the next. Yet precisely in this way do most American high schools schedule the learning tasks they set for students. Few students get the chance to work for sustained periods during the day on one project; few can easily call for help on more than one expert in a particular time period. In short, if you decide to use the high school as a model for your week, the book discussion may have to break up just when it is getting going, and the front steps may languish till they rot.

"I know of no other organization in the world that has duplicated the high school schedule as a way of organizing learning," says McCarthy. Amazingly, though, the standard schedule is one of the few aspects of

American education that has remained virtually unchanged in the last century. Despite the "flexible modular scheduling" trend of the 1960s, most high schools today still operate on some variation of the six- or seven-period day, with classes around 45 minutes long. And even for those of us long past our school years, the schedule continues to wield an almost unnatural power over how we set up learning situations. Few people cannot recall in precise detail the way they moved from class to class during their senior year in school, McCarthy asserts—and many will merely replicate it if asked to design a school schedule on their own.

But does such a way of organizing school time actually help students learn to use their minds well, and teachers to teach? Do all subjects require the same amount of time every day, and must they have it all to themselves? An increasing number of Coalition schools are saying no; and their efforts to change their schedules reveal much about how deeply a school's organization of time is connected with its assumptions about how learning occurs. "Schools equal their schedules," says one Coalition principal emphatically; yet the schedule is often the hardest thing in education to change.

To explore the scheduling issue we spoke with schools at the beginning of this process and those who have long discarded traditional schedule models, schools that teach

Being forced to present a thoughtful and innovative curriculum in a "container" that cannot accommodate it has led many teachers to ask for scheduling change.

a stripped-down core curriculum and those offering a variety of courses as wide as most junior colleges. For each of these disparate schools, however, one thing held true: changes in their schedules invariably were driven by their commitment to principles of learning that simply could not be accommodated by the old time slots. This progression from pedagogy to schedule change is critical if the change is to work, says Amy Gerstein, who as Assistant Director for Schools leads many of the scheduling workshops the Coalition offers at regional symposia. When schedule changes are not driven by educational principles, they risk becoming just another educational fad. The best schedules may actually change continually, in response to the evolving vision of a particular school.

One of the most common such changes is to introduce some form of flexibility that allows teachers to work in greater depth with their students. It has long been acknowledged that science labs require extended periods to accomplish their aims, but as teachers in other disciplines put the principle of "student as worker" into practice, they often find themselves equally frustrated by short periods. Seminars that encourage students to exercise their own critical thinking skills in a new area, serious projects in the library or community, work in small groups at different levels with the

teacher in a coaching role—all these require more than 40 minutes at a time to achieve. Being forced to fit a thoughtful and innovative curriculum into a "container" that cannot accommodate it has led many teachers to ask for scheduling change.

Inevitably, however, any one change has ripple effects throughout the school's schedule. Coordinating course offerings that include requirements and electives is already complex enough; when schools undertake to lengthen some class periods, certain kinds of classic scheduling problems become acute. How these problems crop up—and the resources of time, teachers, and space available to deal with them—varies according to the size of the school. In a large school, where many courses meet in multiple sections at various hours, a student who spends all morning in a lengthened humanities class will still have a chance to take that economics elective in the afternoon. But if there is only one economics section, and it meets in the morning, that extended block of humanities time precludes any other choices.

Partly because of conflicts like this, with small elective courses that meet only once daily ("singletons"), many Essential schools have started with a school-within-a-school that depends on the larger school to provide for all electives. Here a small percentage of the student body follows a different schedule from the other students', often consisting of two extended time blocks in the morning, which may or may not be used for interdisciplinary classes. In the afternoon, most commonly, such students rejoin their peers for certain elective courses.

Figure 1 illustrates a sample student's day using such a schedule. In this school a team of four teachers is responsible for a group of 80 to 100 ninth graders, whom they instruct in science, math, history, and English in groups of 20 to 25 students at a time. Classes meet for an hour and 40 minutes, on alternate days—three times one week, twice the

next. This student, for example, has science three times this week; next week she will have math three times and science only twice. Teachers also meet for a weekly common planning period of the same length. After lunch, there is time for study hall or physical education, and the student rejoins the larger student body for one 48-minute elective period.

Clearly, the schedule reflects definite priorities: a smaller student load for teachers; the personalization that results from one team sharing the same students; more extended time for academic subjects. But students must compromise by having less choice of electives; and some teachers think only seeing a student in class two or three times a week is a compromise as well. The Coalition's Susan Lusi points out that all schedules are built on such priorities and compromises, whether examined or not; the question schools must face is whether the existing schedule in fact reflects their educational philosophy.

But if that philosophy commits the school to teacher-student personalization, in-depth mastery of a limited number of areas, student-



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FIGURE I.

	Monday	Tuesday	Wednesday	Thursday	Friday
8:30-8:49	H.R.	H.R.	H.R.	H.R.	H.R.
8:53-9:41	Science	Math	Science	Math	Science
9:45-10:33					
10:37-11:25	History	English	History	English	History
11:29-12:16					
12:16-12:46	Lunch	Lunch	Lunch	Lunch	Lunch
12:50-1:30	Study	Phys. Ed.	Study	Phys. Ed.	Study
1:42-2:30	Elective	Elective	Elective	Elective	Elective

as-worker, or a number of other common Coalition principles, CES argues that a school-within-a-school structure is ultimately not enough. If it is to work, curricular and pedagogical reform must be embraced by the whole staff, not be regarded as just an "enrichment program" involving a few longer classes. Moreover, the lengthened class periods and extra time—for preparation, support, and development—enjoyed by school-within-a-school teachers has caused divisiveness at many Essential schools.

One Solution: Strip Electives

For some, the only answer is to move unequivocally to a stripped-down curriculum reflecting their highest priority, Ted Sizer's dictum that "Less is more." Such a plan eliminates altogether the courses that cause schedule conflicts, and makes a shift to a 1:80 teacher-student load far simpler as well. Course content that conventionally would be covered in elective classes

—music, art, or calculus, for instance—can be incorporated into interdisciplinary offerings in such a schema, or otherwise arranged as teaching becomes more personalized.

The barest of such schedules is that of New York City's Central Park East Secondary School (shown in Figure II). Here all teachers are teaching at once, and they are all off at once too, to facilitate common planning time. Two-hour interdisciplinary classes meet in the morning and the afternoon, and a student-teacher advisory period is scheduled four days a week. One morning a week, all students go into the community for service projects, while teachers meet to make plans together. Spanish is the only language offered, for one hour before school four days a week; and any other electives take place in the two hours after school is officially over.

The plan appears to work admirably at Central Park East, a 500-student urban school with a stu-

dent body reflecting the heterogeneous city population. But that school was created as an Essential school from its first day. Its philosophy was clear from the start. And no teachers were displaced to make its unusual schedule possible. Few of the Coalition's 57 member schools have offered such a stark testing of the "Less is more" slogan.

The curriculum of Adelphi Acade-

If it is to work, curricular and pedagogical reform must be embraced by the whole staff—otherwise, an altered schedule will only burden and irritate those whose classes remain in the old system.

my, a Brooklyn, New York college preparatory school for sixth through twelfth graders, also comprises only the core subjects, focusing each year on a central theme. (Art and music and a modern language are considered part of the core; students choose between French and Spanish.) Here, the move towards a new schedule with longer time blocks was a direct result of an ongoing shift in the school's teaching philosophy over a period of several years. In the English and history departments, according to Adelphi teacher Phil Stone, teachers were moving towards more analysis and critical thinking in a seminar context. To suit this, they designed a system of double-period seminars in each subject twice weekly, in combination with shorter lessons on alternate days.

"But since the seminar would meet on Monday and Wednesday, or on Tuesday and Thursday," Stone says, "practically a whole week would go by without contact

An 8-period day is the basis at Adelphi, but 45-minute "lessons," or lectures, take up only about a third of the student's time; most classes are 90-minute interdisciplinary seminars.

in the seminar context. The break disrupted the flow, and it didn't foster the kind of thinking for which the seminars were designed." To solve the problem, the two departments combined to teach an interdisciplinary English and history curriculum—based on critical thinking goals, and the seminar as a way of teaching them.

After continual fine-tuning, Adelphi's schedule now works as

shown in Figure III, a tenth-grader's schedule for the week. An eight-period day is the basis, but 45-minute "lessons," or lectures, take up only about a third of the student's time; most classes are 90-minute interdisciplinary seminars in either English and history or math and science. The foreign language, perhaps, is shortchanged; it gets only one 90-minute block and two 45-minute periods in the week, and students can't take two languages because they both meet at once. (Stone notes that the humanities program does try to coordinate its plans with foreign languages, particularly at more advanced language levels.) Where students have options—for example, a choice between two science classes—these are scheduled in the same time block, so no conflict can occur between science and the humanities. In addition, the schedule accommodates a few curricular anomalies: at least one "dialogue" or guidance period weekly for each student; a period where everyone in the

FIGURE II.

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00-9:00	Language	Language	Community Service	Language	Language
9:00-11:00	Humanities	Humanities		Humanities	Humanities
11:00-12:00	Advisory	Advisory		Advisory	Advisory
12:00-1:00	Lunch/ Options	Lunch/ Options	Lunch/ Options	Lunch/ Options	Lunch/ Options
1:00-3:00	Math/Science	Math/Science	Math/Science or Humanities	Math/Science	Math/Science
3:00-5:00	Electives/ Library	Electives/ Library	Electives/ Library	Electives/ Library	Electives/ Library

FIGURE III.

	1	2	3	4	5	6	7	8	9
MON.	Modern Language	Modern Language	Math/ Science	Math/ Science	General Assembly	LUNCH	English/ History	English/ History	—
9 per/ds TUES.	English/ History	English/ History	English Lesson	Math/ Science	Math/ Science	LUNCH	Dialogue	Great Books	Great Books
WED.	English/ History	English/ History	Modern Language	Math/ Science	Math/ Science	LUNCH	Phys. Ed.	Phys. Ed.	—
9 per/ds THURS.	Math/ Science	English/ History	Math/ Science	Math/ Science	Modern Language	LUNCH	Recreat'l Reading	English/ History	English/ History
FRI.	Math/ Science	Math/ Science	Art/ Music	Art/ Music	Math/ Sci. Lesson	LUNCH	English/ History	English/ History	—

school, including the faculty and headmaster, drops everything and reads for pleasure; and a Great Books weekly seminar. Two days a week, a ninth period is added at the end of the day.

How Much Less Is More?

Adelphi has shaped its curriculum expressly towards preparing students for college-level work; and it can defend its "less is more" philosophy on those grounds. But for schools that say vocational electives form an important part of a curriculum that serves a broader range of students, Adelphi's compromise on electives would be unacceptable. For others, stripping the curriculum of most electives would involve an intolerable or unworkable degree of teacher layoffs or transfers. And still others—often high-achieving suburban schools where virtually all students go on to college—are firmly committed to offering the variety in advanced or elective courses that they see as an integral part of their top reputation. These schools see little reason to change a system that is widely recognized as

successful according to all standard measures of academic success.

For such schools, wrestling with the pedagogical issues the Coalition raises is often a matter of asking just how much less is how much more. And even this question can be answered several ways, depending on whether the primary concern is the politics of change within a school or the actual content and scheduling of specific courses. A school committed to the kind of "bottom-up" reform the Coalition advocates, which is supported and initiated by the teachers themselves, may choose to move only cautiously towards schedule changes. Advocates for change in this kind of environment will face more than simple

resentment of a new program that may challenge someone's turf; they must somehow alter long-standing assumptions about what educational success is.

The more mechanical aspect of scheduling changes—one that raises hairs on the necks of both experts and greenhorns in scheduling—is another matter entirely. Schedules are made in all manner of ways, it seems, from computers to late-night committees with chalk in their hair. And they are made by all manner of people, from math teachers, guidance counselors, and administrative assistants to principals and district superintendents. The intimidating and arcane nature of the task is such that few students, teachers, or parents dare challenge "The schedule can't handle it" as an answer to a curricular suggestion or complaint.

Perhaps no one in the Coalition knows the ins and outs of computer scheduling more intimately than Jim Sexton, the director of secondary schools in Louisville, Kentucky, where he supervises the scheduling of the six Coalition schools in his district. Sexton firmly

Many schools are firmly committed to the variety of elective courses they see as integral to their top reputation.

believes that the only way to achieve the personalization he calls fundamental to an Essential school's success is by "block scheduling" of extended periods. "The only way to get to 1:80," he says, "is to get teachers to see the same group of kids for more than one period a day."

Schedule Singletons First

But block scheduling causes some singleton shock waves, Sexton readily acknowledges, especially when courses are scheduled by computer. "Avoiding conflicts is actually easier to do when you schedule by hand," he says. "But all student information is kept in the computer, so we have to start there."

Sexton's scheduling technique is to start with the singleton courses that cause all the trouble, and then work upwards from there. "Singletons dictate a large portion of the overall look of a school," he says. Working from a survey outlining student demand for a particular course, the school principal can determine just how many sections of the course are required, and a master schedule is devised. "The hardest part of the master schedule," Sexton warns, "is making sure you don't have a large number of students who want to take a singleton like calculus conflicting with another singleton like chorus."

To minimize the number of problems, Sexton does a preliminary "plateau run" of the master sched-

ule on the computer, which turns up scheduling conflicts. If fewer than 50 conflicts occur, he says, the schedule will work, and the problem cases get worked out by hand and then plugged back into the computer. "You have to sit down with students and see what choices they might have to make," he says. "You really don't want to make a kid have to choose between a humanities course and band or chorus."

The key to avoiding such conflicts, Sexton says, is not to schedule any course offerings with 30 or fewer students at the same grade level at the same time. Because required courses usually have more than one section, a student then need not choose between two desired singletons. But small schools often have fewer sections for required courses, Sexton notes, making singleton clashes inevitable. Also, in small schools certain advanced or remedial courses with unusually few students may necessarily "bump up" the number of students assigned to basic, required course sections, an obviously undesirable effect.

Back-To-Back Scheduling

So far, then, we have examined two ways of coping with scheduling in the Essential School: stripping down the curriculum to eliminate singletons and electives, and scheduling such courses before and after extended blocks of time in the schedule. Another possibility, however, is simply to schedule certain classes at the same grade level back to back at the teachers' request.

This allows individual teachers to work together in teams if they want to, but preserves the convention of shorter periods and the priority of numerous electives. Some teachers find this a useful way to trade time with others to accommodate longer projects and field trips; others use it as a way to ease into interdisciplinary teaching.

At Bronxville High School, a small public school in a wealthy suburb of New York, ninth-grade

history and English are scheduled back to back for one group and taught in teams. Bronxville's is an eight-day rotating schedule with seven 47-minute periods per day. One class drops out every eight days, so that students can take eight courses, a high priority in this college-bound student population with a strong interest in electives. Electives can meet every other day in the eight-day cycle.

A major component of Bronxville's Essential School program, then, is the effort to provide an interdisciplinary course in history, English, and art, which takes place during back-to-back history and English periods. "Because of the community we're in, we haven't gone to either a school-within-a-school or schoolwide conversion to Coalition form," says its coordinator, Joanne Duffy, who teaches the interdisciplinary course. But the school is moving, in response to community interest, towards more flexible and interdisciplinary approaches within its eight-day schedule. Primary among these is the setting aside of three periods in the schedule cycle for grade-wide "seminars," which incorporate enrichment material and group discussions. The remaining four periods in the cycle are used for physical education and other less frequently scheduled classes. Interestingly, it took 99 computer runs to get Bronxville's schedule to work this way, and when it did finally work, it was by scheduling the long blocks first, using a flexible modular system.

Schools Within Schools

Lincoln High School in Manitowoc, Wisconsin, with a seven-period day of 55-minute classes, schedules its first four periods of every day in such interdisciplinary blocks for the 40 students in its school-within-a-school Essential program. The teachers are very free to trade off time between subjects, says Kristin Urban, an English teacher in the program, and they structure each

"Singletons dictate a large portion of the overall look of a school," Sexton says. And the smaller the high school, the more singleton problems arise.

Scheduling certain classes at the same grade level back to back allows individual teachers to work together in teams if they want to, but preserves the convention of shorter periods and the priority of numerous electives.

day's work together as they see fit. Problems have arisen, though, because certain advanced electives, particularly in science and languages, are offered only in the morning—a situation exacerbated by the fact that many Manitowoc language teachers travel from school to school.

In fact, unless a school is willing to build its schedule by working up, Sexton-style, from singleton courses, it seems inevitable that such a conflict will threaten any program that wants longer periods to accommodate a change in pedagogy. This underlines the need for the integration of the whole school into a Coalition effort if it is to succeed.

But structuring the Essential School as a school-within-a-school, where core courses are block scheduled and electives take place only outside the "program," can work an entirely different way, as at Rochester's School Without Walls, a small city magnet school started in the late 1960s. The heart of this unusual program is an interdisciplinary curriculum known as "extended classes," which occupies students for two and a half hours four mornings a week. Because the school's teaching philosophy is that learning has no "walls"—between subjects, grade levels, abilities, the school and the community, and books and experience—it makes extensive use

of the resources of the community at large. In an important way, it can be seen as a school within a larger "school," which is the community itself.

In the periods directly before and after this central extended period, School Without Walls students meet for other classes in remedial, elective, or advanced subjects. In many cases, particularly with advanced students, they go elsewhere for these classes—to another city high school or college. In other cases, community professionals come in to teach special subjects; or students do independent study with a certified teacher. The staff meets for common planning time during one extended class period weekly, but there is little actual team teaching in the conventional sense.

In the end, this unusual school is an example of just how far one can change a schedule when pedagogy is allowed to dictate the organization of time and the whole staff is firmly behind it. Though the school is quite small, schedule conflicts are actually rare at School Without Walls, program administrator Dan Drmacich says, because the schedule is designed to honor diversity as one of its strongest priorities. The extended classes are designed so that the structure does not dictate what the students do, but rather the students determine what the structure can do for them.

Pedagogy Before Schedule

How, then, can a school alter its schedule to accommodate changing pedagogy without stepping on the toes of teachers who are not involved in the Essential School program? One answer is clearly to work for whole-school commitment to pedagogical change—so more teachers will see gain rather than loss in changes like longer periods. At Parkway South High School in Manchester, Missouri, for example, principal Craig Larson has moved away altogether from regarding Essential School principles as any-

thing "special" or "different" within his 2,000-student school. Instead, the whole faculty is invited to discuss ways to put into practice personalization of their classes, student-as-worker theories, and exhibitions of mastery. And any teacher who wants to explore new ways of doing this is encouraged to ask for scheduling support.

The result is that 46 teachers have already expressed interest in

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teaching more intensively in longer time blocks next year—up from the eleven who were involved in Parkway South's pilot school-within-a-school framework. They include teachers in foreign languages, music, and the arts; and although no particular stress is placed on interdisciplinary classes, natural connections are encouraged to grow. One Spanish teacher, for example, came to Larson with news of a school in Chicago that combines social studies, English, and foreign language curriculum. She has been funded to visit the school, and on her return will help form such a team with other interested teachers, possibly adding a physical science teacher as well. The team will have a four-hour daily block to work with a group of 75 to 100 students, plus daily tutorial time. Larson is hoping that the new use of time will have a positive effect on improving the oral skills of language students.

Larson gives a crazed laugh when he is asked to describe how he will schedule the school next year to make possible such wide-

spread involvement with changing pedagogy. He has been using a mainframe computer program called Socrates to design his master schedule, but says he will combine it next year with having students come in and sign up for classes. Right now, one way Parkway South builds flexibility into its master schedule of six 54-minute periods is by adding a before-school "zero hour" class from 7:15 to 8:10 a.m. Around 15 percent of the students arrive on an early bus to take an extra elective course that might otherwise cause a conflict.

Clearly Larson's scheduling approach does not lend itself to simple description, however. He is a master adjuster, constantly revising his schedule in response to suggestions as teachers' and students' needs change. But Parkway South is a good example of what can be done when a Coalition school is unwilling to strip down its elective curriculum as *Horace's Compromise* suggests—yet is firmly committed to the other pedagogical aims of the Essential Schools movement. Teach-

er resistance is no longer the problem it was during the initial school-within-a-school years, says Patrick Conley, the project coordinator. Teaching and learning are being discussed in new terms by an increasing number of people in the school community. And however stubborn the schedule may seem, it is viewed as a tool and not a tyrant, capable of putting into place the changes that people choose.

There may have been a time when a schedule could be made by dividing up the day into equal blocks, punctuated by breaks long enough for a principal to walk the length of the school backwards, as one student legend has it. But Coalition pedagogy clearly has begun to disrupt that pattern in ways too fundamental to be ignored. How resistant a school is to the necessary next step—serious rescheduling of the entire school—may depend in the long run on how serious it is about the common principles on which the Coalition rests. □



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