

## Chapter 6

# SCHOOL STRUCTURE AND TIME

*“If schools intend to help all students learn at high levels, they must redesign their structures in dramatic ways, creating simple, flexible systems in which students and teachers can develop in complex ways.”*  
*Amy Gerstein, former Executive Director of Coalition of Essential Schools*

*In answer to the question, “What are your three biggest challenges?” more than one California Partnership Academy director responded, “Scheduling! Scheduling! Scheduling!”*

## INTRODUCTION

The structure of U.S. high school has been much the same for over 100 years. High school was originally designed to prepare a few students for college and to provide others with vocational training. While the world has changed dramatically and today’s students need to be prepared for a wide range of evolving educational and career opportunities, the structure of high school and its use of time have not. Developing and expanding multiple pathways programs in California will require that high schools be organized in new ways.

Many California high schools are large, comprehensive schools enrolling several thousand students. In these schools, a typical student attends six different classes to learn six different subjects with six different teachers with six different sets of rules and expectations. A student can pass through high school without being known well by a teacher, counselor, or other adult, and can graduate with minimal preparation for life beyond high school. In addition, many teachers experience their jobs either in isolation from each other or in departmental silos. With the exception of monthly faculty and department meetings, which are often focused on school business, little time is structured to discuss individual students and their work.

Multiple pathways programs address these issues by offering integrated coursework through smaller environments within high schools. They enable students to know their peers and teachers well, and to be known by a team of teachers. Teachers form a community of learners with their pathway students and assume responsibility for student success. Such pathways can help to create multiple connections for students — with peers and teachers; across content and applications in various disciplines; and between school, the workplace, and the community. Pathways can also help teachers develop common strategies for supporting student success and maintaining closer ties with parents. Multiple pathways approaches can bring rigor, relevance, and relationships to the learning environment.

The support of the district central office is key to any successful school improvement effort. The central office is responsible for creating the conditions that promote the implementation of multiple pathways. District leaders are central to creating a sense of urgency and in building consensus among and partnerships with staff, local business and industry leaders, local postsecondary institutions, and the community.

The multiple pathways approach requires districts to have a comprehensive effort for providing students a choice of pathways. Districts that have implemented multiple pathway programs have found they need to modify or create new policies, such as their transfer policies to allow students to transfer from one school or pathway to another. Some other areas for consideration include providing transportation for students and ensuring that pathways address the needs of students with disabilities. Above all, district leaders can focus attention on implementing multiple pathways as an approach *to improve student learning and achievement*.

## **EFFECTIVE PRACTICE**

Practices regarding school structure, pathway structure, and use of time differ in multiple pathways programs from those in traditional high schools. There are trade-offs to consider in any pathway design. Three questions need to be considered:

- How does this change improve teaching and learning?
- How does this change result in students being well known and supported to succeed academically and in other ways?
- How does this change help assure that all students will be prepared for postsecondary education and careers?

## **School Structures**

School structures in the multiple pathways approach can vary. Some schools have just one or two pathways in a traditional high school or charter school; some have “wall-to-wall” pathways, where all students are in a pathway; and some are “single themed, stand-alone schools.” Within any of these scenarios, structure shapes the ways in which students and teachers experience school. It is important to consider purpose before deciding on a structure, which raises a wide range of additional questions including:

- How many and what kinds of pathway structures work best for the teaching and learning?
- How many pathways work best for the school and community?
- What research-base or evidence supports this particular structure?
- How should attention to equity be balanced with student choice to avoid segregating students into homogeneous groups that result when student choice alone determines pathway enrollment?
- How important is personalization of learning to student success?
- Does the proposed structure encourage flexible use of time?
- Does the proposed structure support student participation in work-based learning?
- How would pathway teachers teach differently if they taught the same students for three or four years rather than working with 150 or more new students each year?
- If a team of pathway teachers has more collaboration time, how could they best use it to improve both student and teacher work?
- What would it be like for a team of teachers to take personal responsibility for the learning of just a few hundred students?

Each of the structures described below has advantages and disadvantages, as well as implications.

### **Pathways Within a Comprehensive High School**

For schools with just a few pathways in an otherwise traditional school, students who do not have a clear career interest do not have to select a pathway, and teachers who prefer traditional schedules also have a place. Starting with one or two pathways also enables the school to hone its practice. On the negative side, the pathway staff and teachers can become marginalized or detached from the rest of the school. This situation can be aggravated by the perception that one group is receiving more attention than the rest of the school.

Wall-to-wall pathway structures can foster a sense of common purpose, camaraderie, and equity among faculty and students. On the other hand, a wall-to-wall approach requires that the school select its pathway offerings carefully, with each pathway sufficiently broad in theme and well-designed to offer a rigorous and equitable education to all students. Further, districts must ensure that students have sufficient opportunity for career exploration before selecting a pathway, and that parents and students have sufficient information. The district must also make provisions for students to change pathways, if necessary.

### **Small, Autonomous Schools**

Small, stand-alone high schools often focus on a particular career theme. These schools can also feature the elements of a pathway: academic core, technical core, work-based learning, support services for students, a focus on postsecondary education and career as mutual goals, and industry and postsecondary partnerships. Single themed, stand-alone schools (or autonomous schools within a larger campus) provide the advantage of schoolwide purpose and coherence, as well as a “critical mass” for the engagement of employers. Health Professions High School in Sacramento, as well as the Construction Tech Academy and School of Digital Media and Design on the Kearney campus in San Diego are examples. The challenges are that pre-selection career exploration and family orientations must occur at the middle school, and students who find they are not interested in the school’s theme must either change schools or find other reasons to stay in the school.

### **Pathway Structures**

The U.S. Department of Education defines a smaller learning community (SLC) as “an environment in which a core group of teachers and other adults within the school know the needs, interests, and aspirations of each student well, closely monitor his or her progress, and provide the academic and other support he or she needs to succeed” (<http://www.ed.gov/programs/slcp/applicant.html>). A pathway is one variety of a career-themed SLC in which students are enrolled in a sequence of CTE courses as well as linked academic classes aligned with this theme.

The essential structure of a pathway is a cohort of students and a cadre of teachers, together in linked academic and career-technical classes during all or part of the school day. In addition, the

students have access to integrated work-based learning opportunities and in-school supports. But within this broad definition, pathways can vary in their thematic or career focus, and in their duration, including the grades they encompass, size, scope, organization of courses, and use of time. Pathways may also vary in the extent to which students learn in classrooms, online, in industry or community contexts, and in other dimensions.

### **Duration and Grade Spans**

Multiple pathways programs typically begin in either ninth or tenth grade. ConnectEd, The California Center for College and Career, encourages a four-year model beginning in ninth grade, which is the model being implemented in ConnectEd's district initiative. However, most existing models within the multiple pathways approach begin in the tenth grade and span three years.

The four-year span is intended to engage students when they first begin high school, before they have the opportunity to lose interest in school. The challenge is that middle school articulation must be tight, so that students are both academically prepared and have some idea of which career area they would be interested in. Given that middle school students may not be ready to decide about career themes, extra care must be taken to ensure that pathways offer broad transferable knowledge and that students can change pathways (Crabtree & Darche, 1999).

The Long Beach Unified School District (LBUSD) has concentrated on helping eighth grade students, parents, and counselors understand what the ninth grade pathway options are. A fair showcases all of the pathway options; high school and middle school counselors meet with students and parents to discuss the options. A PowerPoint presentation about the pathways is distributed to all of the middle schools. Additionally, LBUSD has begun implementing the Explore exam, which gives students information about their knowledge, skills, interests, and plans.

The three-year model allows students more time to decide which pathway area would be of interest, and it can be coupled with other means to engage ninth graders and facilitate their transition to tenth grade. A three-year scenario also suggests that a broad array of pathways may need to be offered at a single school. Should students decide at the end of ninth grade that their preferred career area is only addressed in a pathway across town, transportation issues must be addressed.

Some schools have two-year pathways, but in these, offering the full complement of pathway components is difficult. This approach has the advantage, however, of allowing students more time to decide which career areas are of interest.

### **Pathway Size**

Ideally, a pathway is small enough to allow for every student to be well known and for learning to be personalized, but also large enough that the majority of pathway teachers are full time (or close to full time) in a single pathway. Pathway size can vary greatly, however. "Small" may mean as few as 30 students or as many as 150 students per grade level.

The ConnectEd California Pathway Certification Tool is designed to guide the review and certification of pathways in California high schools (ConnectEd: The California Center for College and Career, 2009). ConnectEd recommends a pathway size of 300 to 500 students and suggests that if pathways are smaller than that, the staff needs to adequately address scheduling needs (e.g., offering a full range of academic and technical courses). Some SLC researchers advocate a size of no more than 400 students (ConnectEd, 2009). Other researchers found that 600 to 900 is the (whole) high school size that correlates with the biggest gains on National Longitudinal Evaluation Study tests, but few studies focus on optimum “school within a school”/pathway size (Lee & Smith, 1997). California Partnership Academies, while they may serve more students, are funded for 90 students in grades ten through twelve.

Depending on the pathway’s size, pathway teachers will typically have the same students in their classes for two or more years. Pathway teachers learn each student’s strengths and areas for improvement in ways that rarely occur in a larger, more traditional school. Furthermore, based on student enrollment, the larger high schools need to consider the optimum number of pathways that will best allow for scheduling of pathway students and teachers. In a school of 1000 students, for example, it may be best to convert the school into three distinct ninth through twelfth grade pathways rather than try to offer six or seven smaller pathways that make scheduling far more difficult and involve teachers being assigned to more than one pathway.

### **Teacher Scheduling**

Similarly, a district’s or school’s priorities may be that all teachers are — to the extent possible — full time in a single pathway, and that pathway teachers share a common preparation period. While there may be some advantages for a teacher having one course preparation (e.g., World Cultures for five periods a day), it is not possible for a teacher to have the personal investment in the pathway and teaching team needed to support integrated curriculum when the assignment involves teaching World Cultures spread across three different pathways as opposed to teaching World Cultures and U.S. History full time and looping with students for two years in a single pathway.

If the degree to which teachers are assigned to work with members of a single pathway team is essential to pathway success, districts and schools need to deliberately create integrated teams of dedicated teachers who work collaboratively with a group of students over time. Schools will need to be vigilant about scheduling pathway students into pathway classes, if pathway classes are to be made up of pathway students only. Beyond that, schools also need to design master schedules to support the scheduling of pathway teaching teams so that teachers have dedicated time to work together to create a culture of shared responsibility and commitment and to improve teaching and learning through integrated projects and other inquiry-based approaches.

### **Time and Scheduling**

In *Block Scheduling: Innovations with Time*, the authors state that “There are many factors that influence what happens in America’s schools, but none is as influential as the use of time. The scheduling of school time dictates how the days, weeks, and years are organized, such that

everything we do has a designated time limit. Time determines class schedules, structures the curriculum, influences teaching, and shapes the interactions between teachers and students.” (LAB at Brown University, 1998)

The question of whether or not American students spend enough time in school or enough time receiving instruction in core academic subjects has been debated for many years. The 180-day average school year in the United States is 13 days shorter than the international average. (Gonzales, et al., 2003). American students also spend fewer hours each day in school than most students elsewhere, and American schools allocate less time to core instruction than do other industrialized nations. For example, core academic time in U.S. schools was estimated at 1,460 hours during the four years of high school compared with 3,170 hours in Japan. (Stigler & Stevenson, 1991)

“Prisoners of Time,” a study by the National Commission on Time and Learning (1994), revealed the degree to which today’s American school is controlled by the clock and calendar:

- With few exceptions, schools open and close their doors at fixed times in the morning and early afternoon; and the school year lasts nine months, beginning in late summer and ending in late spring.
- According to the National Center for Education Statistics, schools typically offer a six-period-day, with about 5.6 hours of classroom time a day.
- No matter how complex or simple the school subject, the schedule assigns each the same national average of 51 minutes per class period, no matter how well or poorly students comprehend the material.
- Secondary school graduation requirements are universally based on seat time.
- Despite the obsession with time, little attention is paid to how it is used.

A key goal — particularly for pathways programs — is for schools to treat learning as the constant rather than time. Time should be variable, because some students may need longer to master content or a particular skill. The priority should be to use time in ways that provide students with learning experiences — including work-based learning experiences — that are meaningful, complex, challenging, and engaging. For this to happen, both state and district policies must support a more flexible use of time.

Multiple pathways require fundamental changes in the process by which master schedules are developed. Students cannot simply be placed in any available section of a given course. Rather, multiple pathways students are scheduled into pathway-specific course sections along with other students in their “cohort.” Likewise, multiple pathways teachers are scheduled so that their classes are “blocked” with those of other teachers in their pathway. There may also be parameters regarding scheduling certain pathway classes at particular times of the day to facilitate the engagement of industry and postsecondary partners in the classroom and of pathway students in off-campus job shadows, internships, social enterprises, or dual enrollment classes.

Pathways teachers likewise need flexibility in scheduling coordination and integration of teaching. Usually, such joint planning comes during common preparation periods. The pathway

lead-teacher/director often has an additional non-teaching period to facilitate overall coordination for the pathway, contact and work with industry and postsecondary partners, monitor student attendance and grades, provide additional support for students, oversee integrated projects, complete reports and paperwork, and manage other aspects of the pathway. This additional pathway coordination period needs to be considered in the scheduling process.

Similarly, time for students to participate in internships and other community-based and work-based learning experiences must be part of the equation when hours in the school day and days in the school year are considered. Even when experiences are based at the school, such as in “social enterprises,” students require adequate time to work on their projects. Time for several teachers in each pathway may be extended to enable coordination and to link opportunities with classroom curriculum, and provide internship seminars and dialogue with industry professionals.

### **Pathways Implemented Through Traditional Schedules of Six or Seven Periods**

In 1906 the Carnegie Foundation decreed that 120 hours in one subject would be the standard time unit to measure credit earned in secondary schools. The Carnegie Unit still exists. Most schools adopted a schedule of classes meeting four or five times a week for 40 to 60 minutes, 36 to 38 weeks a year. This structure reflected the Industrial Age model in which students were sorted according to perceived abilities, and school was not open during the summer so that students could work. Little has changed.

Many high schools use a “traditional” schedule with six or seven periods a day (sometimes eight), each lasting from 45 and 60 minutes. Students usually take six or seven classes; teachers teach five or six, with one preparation/conference period. Schools have experimented with variations in which courses meet at different times during the day, or with schedules in which half the classes meet for longer blocks of time for two days each week, but they all usually incorporate 360 minutes per day.

In multiple pathways programs, traditional six-period schedules must be carefully designed to enable students to complete both a college preparatory course of study and a full four-year sequence of CTE courses. This schedule can work if electives, remediation, and other coursework beyond those required to fulfill the requirements of the pathways components are kept to a minimum. The table below presents a sample ninth through twelfth grade schedule of a typical student in a typical district in one pathway.

## How to Implement Pathways in a Six-Period Day

Course Type	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12
a	Social Studies		✓World History	✓U. S. History	✓ Econ/Govt.
b	English	✓English	✓English	✓English	✓English
c	Algebra 1	✓Algebra 1	✓Geometry	✓Geometry (adv.)	✓Algebra 2/Pre-Calculus
d	Science	✓ Biology	✓ Chemistry	✓ Physics	
e	✓World Lang. 1 (not all schools)	✓World Lang. 2			
f			✓VPA	✓VPA	✓ VPA
g	Career Exploration/Life Skills	CTE: Intro. to Engineering	CTE: Principles of Engineering	✓ CTE: Civil Engineering and Architecture	CTE Capstone
PE	PE	PE			PE or Other Elective
<b>Pathway Experiences (built into pathway programs and courses)</b>					
Career Explor.	Real Game/Tours/ Job Shadowing	Tours/Job Shadowing	Counseling/Tours /Job Shadowing	Counseling/ Reflection/ Planning	Planning/ Transition Support
WBL	Community Project	Community Project	Social/School-based Enterprise	Social/School-based Enterprise	Internship
Ninth and tenth grade support and summer/bridge programs; dual enrollment with community college as necessary					

✓ = Meets a-g requirements

### Pathways Implemented Through Block Schedules

Block scheduling provides students and teachers with fewer classes per day with each class meeting for a longer period of time to allow more time for teaching. Block schedules can also allow students to take more electives, recover credits, or accelerate learning. As a result, block scheduling provides a flexible approach that has many benefits for multiple pathways programs.

Block schedules have two common designs. The first is a four by four (4 x 4) semester plan in which students take four courses a term and earn a full year of credit. They take eight courses in a year. Teachers typically teach three courses each term. A 4 x 4 block scheduling offers students the possibility of graduating with more courses completed, thereby allowing students to meet both a-g course requirements and take a full sequence of CTE courses.

The 4x4 can be problematic for AP courses, since students take the exams in the spring, either months after they have finished studying a course or before they have completed the curriculum. Some schools have addressed the need for year-long courses on a block by having students always choose a pair of AP classes during class registration. Thus, courses run all year long on alternate days. Both AP classes last as long as a regularly scheduled block course.

<b>Sample basic 4 x 4 schedule with “skinny” courses during the third period</b>	
First Term	Second Term
Course One	Course Six
Course Two	Course Seven
Course Three (“skinny” class, 45 minutes daily, runs full year)	
Course Four (“skinny” class, 45 minutes daily, runs full year)	
Course Five	Course Eight

The second common form of block scheduling is the A/B plan. Students take seven or eight courses for the entire year, but courses meet every other day so that teachers meet with only half their students each day. A common variation is having one day a week, usually Monday or Friday, when all classes meet for a shortened time. This schedule gives teachers the opportunity to see all their students on one day each week.

Another variation combines the traditional schedule with a block schedule. For example, a school might have six 50-minute periods on Monday, Wednesday, and Friday and three 100-minute periods on Tuesday and Thursday.

#### **Block Scheduling at James Campbell High School**

At James Campbell High School in Ewa Beach, Hawaii, the school offers a 4 x 4 block, and each teacher’s prep time is the half hour before first period block begins and the half hour after fourth period block ends. At least two days a week, the teacher’s “non-teaching period” is used for embedded professional development, collaborative meetings, and peer observations. As a result every teacher participates in almost three hours of professional development every week. The fact that Campbell is demonstrating significant growth in student achievement and in closing the achievement gap is often attributed – by Campbell administrators and teacher-leaders – to this embedded professional development. The savings in the cost of substitutes for professional development, accompanied by larger class sizes and increased student attendance, tends to offset any of the usual added costs associated with block schedules. (NOTE: Three of the “non-teaching periods” each week, totaling approximately 261 minutes, are also available for teachers to use as preparation time.)

Proponents of block scheduling believe it is easier to engage students in learning. The longer block of time allows for more in-depth instruction, works well for labs and technical courses, and supports project-based instruction. Other advantages include reduction in time lost between classes, fewer tardies, and because teachers see fewer students each day, more personalized learning. However, because students typically enroll in more classes each year (eight instead of six or seven), block scheduling can be more costly in terms of personnel.

Successful block scheduling requires high-quality, rigorous instruction, with strategies that are appropriate for longer class periods. Teachers must have professional development to equip them to teach successfully in the block classes. School reform experts recommend that schools build in at least 50 minutes each week for additional teacher planning and collaboration. Some schools, for example, have a late-start day so that teachers have time for professional development and collaboration.

## **Pathways Implemented Through Modular or Flexible Schedules**

Modular scheduling is similar to what most colleges use, with some classes meeting every day, and some meeting two or three times a week. Class lengths can vary as well. Some schools combine modular scheduling with online learning. They may blend classes of varying length that meet two or three times each week with face-to-face seminars that meet weekly or bi-monthly and involve field work, online courses, independent study, and dual enrollment options. Although modular scheduling has been adopted with some success in some high schools, one challenge is that not all students may be scheduled into classes at a given time. Also, scheduling students and teachers is more complex.

### **The Center for Advanced Research and Technology**

The Center for Advanced Research and Technology (CART) in Clovis, California, is a stand-alone facility serving eleventh and twelfth grade students. CART is a charter school operated through a joint-powers agreement of the Fresno and Clovis school districts, with the charter currently held by the Clovis Unified School District. Housed in its own 75,000 square foot facility, CART offers students from any high school in both districts the opportunity to enroll in one of 13 to 15 “learning laboratories” that combine advanced academics with hands-on projects and work-based learning experiences. Operated as a half-day, non-degree granting program, students attend CART three hours per day while remaining officially enrolled at and ultimately graduating from their “home” high school. Staffing and other funding are provided jointly by the school districts; CART also receives ROP funding for selected courses, and some donations from employers.

## **Pathways Implemented Through Trimester Schedules**

Most schools operate on a two-semester schedule (with a few summer school offerings). Some schools with pathways and SLCs prefer a trimester schedule. The number of courses taken and their length can vary. The school year is typically divided into three 12-week terms, and students can take five courses per 60-day trimester and earn a year of credit in two trimesters. Students can usually earn 7.5 credits each year, and the model supports increased pathway CTE courses and other electives. It also allows students to recover credits needed for graduation or to retake a semester of a course to improve their grades. The difficulty is a lack of continuity. For example, a student could take Algebra I during the first trimester and not take the second half of the course until the third trimester.

### Examples of Several Other Scheduling Approaches

- Schools offer early and late-start options, twilight school, Saturday school, inter-sessions, and summer school to enhance student learning.
- Other schools have shortened summer vacation and add several two- or three-week breaks throughout the extended school year; these breaks can also be used to provide extra support for struggling students or for planning time for pathway teacher teams.
- Some districts have year-round schedules with varying start and end times for different cohorts of students.
- An Oregon school has divided the school day into four 83-minute blocks with a 35-minute activity period at the end of the day. In some of the 83-minute blocks, students may have two 40-minute classes with three minutes for passing. Some of the 40-minute periods meet every day; some meet every other day. Core academic courses are 83 minutes long and meet every other day. Another Oregon school offers some of its courses as online classes with students meeting face-to-face with the teacher in a seminar once a week, but completing other aspects of the course online or in field placements. This innovation offers students access to advanced or specialized coursework that would not otherwise be available at their school, opportunities for credit recovery or to make up poor grades, more flexibility in structuring their school day, or a more challenging summer or after-school learning experience.

### CURRENT STATUS

Both through broad-based initiatives and local efforts, schools are addressing issues of structure and time. For example, nationally, The Bill and Melinda Gates Foundation and others have promoted small schools, usually with 400 students or less. These schools have tended to be stand-alone, new small schools. In many cases, however, large comprehensive high schools have been converted into multiple smaller schools that share some facilities, such as libraries and gyms, but also have separate authority over curriculum, scheduling, staffing, budget, and other school operations. Other high school redesign initiatives form a community of learners with the same group of students using a “school within a school” approach.

Increasingly, high schools are adopting Middle College High School and Early College High School approaches and are partnering with two- and four-year colleges to offer high school students opportunities to take dual enrollment classes. In some instances, students can graduate from high school having already earned 20 or more units of college credit.

The Mott Foundation has supported extended learning through after-school programs, including Saturday school or Twilight School<sup>1</sup> for credit recovery and dual enrollment opportunities.

California has close to 500 career academies in which sophomore and junior students and their teachers spend at least half of each day in a block of interdisciplinary classes (three or four core

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<sup>1</sup> The Twilight School is an alternative educational program associated with the regular comprehensive school. The program helps the school district better meet the needs of students who are having difficulty adjusting to school or controlling their behavior. The term “twilight” refers to the modified time and instructional circumstances necessary to accommodate student learning, and not necessarily to the time of day. Retrieved October 2009 from <http://www.richmond-heights.k12.oh.us/HS/Twilight%20School.htm>.

academic classes and one CTE class). The number of academy courses offered in grade twelve varies and typically includes one or two core academic classes and one CTE class.

California is also examining its facilities planning to better align “form and function” — that is, to ensure that school design enables engagement, personalization, “connectivity”, and “authenticity” in learning, as well as provide shared use of space with communities, and access to community-based and work-based learning opportunities (CDE 2008).

At innovative schools, such as the MET Big Picture Schools in Oakland, Sacramento, and San Diego; Envision Schools in Hayward, Oakland and San Francisco; and High Tech Highs in San Diego, students work with teachers to develop standards-based learning plans for their internships, and these internships often occur during part of the school week.

Six districts (Antioch, Long Beach, Pasadena, Porterville, Sacramento, and West Contra Costa) are funded by the James Irvine Foundation to work with ConnectEd, the California Center for College and Career, to develop high-quality pathways and, simultaneously, to continue their work to develop districtwide systems of pathways. Five other districts are working with ConnectEd to plan for systemwide implementation of multiple pathways, and other districts have expressed interest.

In most of the above examples, a team of interdisciplinary teachers, including one or more CTE teachers, shares collaboration time. Ideally, where pathway classes are “purely” scheduled and “blocked” so that the entire team of teachers and students are together in closely linked classes for substantial time each day (or every other day), pathway teachers team teach; engage students in longer, more complex labs or projects for several hours at a time; and adapt the daily schedule to regroup students for personalized instruction, exhibitions of work, work with pathway partners, internships, or pathway events.

#### **Some Emerging Practices**

- At Luther Burbank High School in Sacramento, each of the ninth through twelfth grade career academies operates as a semi-autonomous “school-within-the-school” that schedules its own students. The school offers some “universal” classes, such as band or Advanced Placement, but all other courses — including a sequence of CTE courses related to each academy theme — are part of each academy’s program of study.
- At Life Academy, a small school focused on health and bioscience in Oakland, school begins in August, and the first semester ends in December. The second semester begins in early January and ends in mid-May. The school adds an innovative session in which every student takes a single course over a month-long period. Ending the first term in December allows the school’s predominantly Mexican-American student population to visit family in Mexico over the winter holidays. Tacking on an extra course at the end of the year provides teachers and students the opportunity for an in-depth learning experience or for credit recovery.
- At Envision Schools, “early release” Wednesdays allow all students to participate in weekly work-based and community-based learning experiences, and all teachers to collaborate in extended professional development and pathway coordination.

## **CHALLENGES**

Multiple pathways require new responsibilities for teachers, including integrating their curriculum with other teachers on their team, working to engage industry partners in their classrooms, and helping support mentoring and internship programs for pathway students. If pathways are to be effective, teachers need more time to know their students well, plan, focus on quality student and teacher work, and meet the responsibilities of both a classroom teacher and a pathway team member. Structures and schedules need to allow for the creation of environments in which each student is known by — and has the support of — at least one adult in the school, and in which students and teachers are together in integrated pathways/learning communities for all or much of the school day. Teachers need time to coordinate and plan, and students need time to complete seven or eight courses each year. The following key challenges exist.

### **Lack of Flexibility**

While block scheduling in pathways promotes collaboration among teachers and staff and personalization for students, longstanding bureaucratic structures, regulations, and policies support traditional structures and uses of time. For example, testing for both AP and No Child Left Behind reinforces traditional schedules because students in block schedules often take courses aligned with these tests in the fall, and the tests are given in the spring. In addition traditional departmentalization competes with cross-disciplinary collaboration, and it extends to facilities, where classrooms are clustered by discipline.

Schools and districts need funding and support to provide flexibility in scheduling and the use of time for multiple pathways students and teachers.

### **Impact of Fiscal Crisis**

Decisions about structure and time often are based not on what research and promising practice regard as best for students, but on cost savings alone. For example, the current fiscal crisis has forced some schools and districts to curtail innovations in the use of structure and time. In Petaluma, Mount Diablo, and many other districts, summer school was eliminated or severely curtailed. In San Lorenzo and Hayward Unified School Districts and elsewhere, as a cost saving measure, high schools were required to move away from a 4 x 4 block schedule. Previously, students had the possibility of graduating with 32 courses; now the typical student can only complete 24 courses and has more limited opportunity to complete all a-g requirements and to complete a full CTE sequence.

### **Six-Period Day**

As more high schools revert to a six-period day to save money, as the option of summer school is limited — especially in low-income communities — and as graduation requirements increase, it becomes more difficult to implement a fully developed pathway program in which students have access to a CTE class each year. Challenges to implementing multiple pathways in a six-period day include the following:

- *District graduation requirements.* The student course sequence does not allow for other courses that are often required of all students, such as Freshmen Focus class (semester), required health (semester), required computer class (semester), or required ethnic studies class.
- *Student support and academic enrichment classes.* Current strategies for addressing the needs of students require extra support may challenge students' ability to complete all required components of a pathway. For example the course sequence presented on page 8 of this chapter does not include:
  - Required intervention courses in English and/or mathematics for students who are not yet proficient in these subjects. Double-dosing students not yet proficient in English and mathematics is common.
  - Additional required courses for English learners who often must complete English language program requirements before taking the regular college-preparatory English classes.
  - CAHSEE courses that some schools require in preparation for the CAHSEE or for students who have not yet passed the CAHSEE.
  - Any AVID classes, which enhance study skills and provide support for students to succeed in more challenging courses.
  - Credit recovery classes or repeated classes for students who earned D's or F's the first time they took the courses. Many districts no longer offer summer school or severely limit access to summer school.
  - AP or International Baccalaureate classes; though these usually take the place of other college preparatory classes, there may not be a sufficient number of students in a given pathway who qualify to take these courses to make up a pathway class; if students take the courses outside the pathway, it may compromise the integrity of the cohort.
- *Other electives.* There may not be as much room in students' schedules for courses such as student leadership, band, yearbook, journalism, drama, speech, computers, or other electives important to many students and also important in the college application process.
- *Other college entrance requirements.*
  - Almost all students begin their studies of foreign language in middle school and may need to complete at least three years of a foreign language to qualify for their college or university of choice.
  - UC Office of the President is now requiring that students have completed 11 of their a-g required courses by the end of their junior year, which makes it harder for students to take additional elective classes, including CTE classes, until they meet this UC requirement.

Further, the solution to the scheduling challenge of the six-period day is not as simple as going to a seven-period day and having teachers teach six out of seven periods because adding a period adds tremendously to the teacher workload.

## **Facilities**

Related to the issue of cost savings, is the issue of facilities design. According to Bruce Fuller, “Concentrating students into larger school plants and using a factory model to attempt to educate more students at lower expense produced the ‘one best system’ concept in education, which does not engage students well today” (CDE, 2008). The resulting financing model constrains creativity in designing schools that promote distance learning, independent study, project-based learning, and cooperative joint-use opportunities, among other strategies essential to 21<sup>st</sup> century schools (CDE, 2008). California facilities funding policies have fostered the development of large comprehensive high schools and actually give priority to the factory model. There is an immediate need to rethink these policies and priorities to accommodate smaller learning communities.

## **Limited Online Learning Opportunities**

UC approves limited online offerings to meet a-g requirements. Currently only Education Programs for Gifted Youth at Stanford, National University Virtual High School, PASS/Cyber High School, and UC College Prep have UC-approved online courses (<http://ucop.edu/doorways>). Also, accredited online courses usually involve costs to students, parents, and the schools and districts. As a result, far fewer online learning opportunities are available for low-income students. However, access to some online courses is beginning to improve. For example, UC College Prep publishes free online content and makes UC-approved AP and college preparation courses freely available (Watson, J., Gemin, B., & Ryan, J., et al., 2008).

## **Rural and Small Schools and Districts**

Rural and small districts in California are particularly challenged to implement multiple pathways. In California, while rural students are large in number, they constitute a small percentage of students overall. They are diverse, with one in five designated as an English learner (Johnson and Strange, 2007). The challenges include:

- Small size, especially for districts of 500 to 600 students.
- Distances and transportation between schools in rural areas.
- Limitations in the number of sections that can be allocated.
- Limitations in offering math, science, and special education classes.
- Limited options for industry partnerships. Many rural areas do not have a large industry base. For example, Lake County has a population of 60,000 with no large employers other than government agencies and small hospitals with 20 beds.
- Limited options for exposing students to different careers.
- Limited funding.

## CONCLUSION

Developing and expanding multiple pathways programs in California will require that high schools be designed and organized in new ways. The structure and size of California's high schools and their use of time need to be transformed to accommodate a wide range of evolving educational and career opportunities for all students.

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