

NET CHOICES, NET GAINS:
Supplementing High School
Curriculum with

Online Courses

All secondary school students deserve access to a wide variety of high-quality courses. Yet many schools — especially smaller, rural and resource-poor urban schools — can offer little more than a basic curriculum. For their students, these limited offerings can translate into a limited future.

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WestEd

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Imagine, for example, a teenager living in an isolated rural community where she attends a high school of 160 students. This student — we'll call her Maria — dreams of becoming a pediatrician. In other circumstances, her dream might be very realistic, because Maria is a bright, motivated student who has thus far been successful in all her academic endeavors and especially so in her science classes. Yet getting into a top-notch college — not to mention medical school — poses a formidable challenge because her school does not provide a full spectrum of

science courses; for example, there is no biochemistry course. Nor does her school provide the honors or Advanced Placement courses that could make Maria more competitive in the college application process. Absent any change, Maria's dream of being a doctor could remain just that.

Unfortunately, the academic limitations exemplified in this hypothetical vignette are very real for many American high school students. In some instances, school faculty lack the expertise to teach more specialized or advanced classes. In other instances, it may be impractical to offer specialized courses for the relatively few students prepared for or interested in taking them. The same holds true for Advanced Placement (AP) courses. About half the nation's high schools offer no AP courses. Of those that do, many only offer one or two (Gruber, Wiley, Broughman, Strizek, & Burian-Fitzgerald, 2002).

At one time, students like Maria might have turned to correspondence courses for curricular options not available at their local school. Now, a growing number have access to a more contemporary — and more immediate — form of distance education: online courses. (See “Online Learning Takes Off.”) Today, a school like Maria's might well use a federal technology grant to upgrade its media lab and then sign up with a program that provides its students with Web-based courses. In such a scenario, Maria could be taking Biochemistry and AP Biology over the internet next semester.

Virtual schools and online learning programs are a diverse lot, with organizational structures and service delivery approaches designed to meet the needs of

the particular student populations they target. This Knowledge Brief focuses specifically on programs intended to provide supplementary online courses to high school students who would otherwise be unable to take them, due to scheduling conflicts or their own school's limited curriculum, among other reasons.

The brief identifies key issues related to online learning that, if appropriately addressed, increase the likelihood of student success. It is intended primarily for districts

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or schools that are considering participating in an online learning program to expand course options, as well as for entities considering developing an online learning program. While some issues addressed in this brief pertain directly to participating schools, most fall within the purview of the online learning program

itself. That said, when considering whether to adopt a particular program, districts and schools should pay special attention to how the program has dealt with these issues. The information that follows is drawn from a review of the research literature and interviews with experts in the field about successful development and implementation of online learning programs for high school students. The brief also draws from WestEd's evaluation of the University of California's College Prep (UCCP) Initiative (see “The Origins of this Knowledge Brief”).

Quality Online Curriculum

» Use a pedagogical approach that promotes productive learning in an online environment.

Experts in online learning agree that students are more successful when the online teacher plays an active

Online Learning Takes Off

The concept of delivering courses online has taken off quickly. Virtual schools, including programs offering one or more Web-based courses to students enrolled in traditional schools, have proliferated in recent years. According to a recent report by the Peak Group (2002), there are 88 virtual schools in the United States. Virtual schools coordinate, deliver, or broker online courses to high school students, schools, or districts (SREB, 2002). Such schools are now operating in more than half the states; in 14 of these states, there is a state-designated virtual school, which receives considerable state funding and serves students statewide. Virtual schools and programs offering online courses are operated by a variety of entities, including colleges and universities, local education agencies, regional education consortia, charter school developers, and textbook publishers and other for-profit companies (Clark, 2001).

With the rapid creation of new online course programs and expanding interest nationwide, the number of high school students studying online is growing rapidly. By one estimate (Clark, 2001), up to 50,000 K-12 students were expected to take one or more online courses during the 2001–02 school year. By the following academic year, there were 180,000 K-12 enrollments in online courses, according to the Peak study (2002), with more than 1 million enrollments anticipated by school year 2004–05.

role in the learning process and courses are highly interactive. Students also profit from online courses designed to allow them to work at their own pace and still complete a course in a reasonable amount of time. A program can help make this happen by requiring all students to complete assignments within a prescribed period, while allowing them to move ahead as soon as they have completed an assignment, irrespective of how quickly they do so. Some programs require students to select one of several different pacing schedules; the Florida Virtual School (FLVS), for example, requires students to commit to taking their online course at the “accelerated,” “normal,” or “extended” pace, and to setting a target date for completing each module.

In the same vein, effective instructional design helps online students acquire productive study habits. To do so, programs can, for example, encourage students to work collaboratively on projects, mandate student participation in online discussions, and require that students submit drafts of writing assignments

early enough to allow sufficient time for instructor feedback. By tying such requirements into the grading system, programs signal their importance. Such habits are important for all students, but are especially so for online students, who may spend a considerable amount of time working alone, often without the benefit of face-to-face interaction with peers or teachers.

In a traditional classroom setting, if a teacher’s instructions are ambiguous, students can ask for clarification on the spot. But if instructions from an online teacher are not clear, a student may be unable to move forward until he or she can reach the teacher and seek clarification. Thus, online course content and instructions should be explicit, and online instructors should make an effort to anticipate and address the type of questions students are likely to have. For example, if the course includes an aligned textbook or suggested readings, the online instructor can cite specific page numbers where students can find related information.

» **Ensure the quality of courses by employing content experts, content standards, and a sound course review and updating process.**

Like any high school course, quality online courses should be developed around widely accepted content standards. Course developers must have content expertise and work in conjunction with instructional design specialists and Web designers. Course developers should first define specific learning objectives and then select the most suitable technology, rather than letting the technology drive the learning objectives. Setting a schedule for course revision can help ensure that courses are always up-to-date. All online courses should be reviewed during development by subject-matter experts using an established set of criteria. The course development process for FLVS, for example, requires that all courses be designed around a specific motif and aligned with state content standards. All courses must then be reviewed by subject area experts and undergo a peer review process against multiple criteria, before, finally, being examined by a team of external reviewers. Once in use, courses should also be periodically reviewed by experts for updating purposes.



than for traditional high school courses, improve considerably when students receive adequate preparation and support for online study. More established programs have found their completion rates increase — often rivaling those of traditional courses — once they institutionalize procedures for preparing and supporting students for online study.

Online learning program staff report that many students mistakenly believe that online study will be easy, so they enroll in a course only to drop or fail it once they discover that online study requires discipline and hard work. It is the responsibility of the course provider, as well as the student's school, to make sure that students

have the academic preparation to take a given course and understand the nature and demands of online study. Once enrolled, providing online students with ongoing, comprehensive support is key to keeping students engaged and on track (Timms & Aronson, 2001). When students are adequately informed about and prepared for online study, and receive the support they need, they have what they need to complete and succeed in online study.

Effective online learning programs ensure that students receive support at multiple levels, minimally, from the online instructor, from the program itself, and from family and peers. Additionally, many programs have found it important to provide support from school-based staff serving as onsite coaches.

Online instructors must be available to students by email and telephone during standard school hours and, preferably, after hours as well. They should be in regular contact with their students, but minimally, they need to respond promptly — however “prompt” is defined by the program — to student questions

Effective Student Support

» **Make sure students understand what online study entails, and provide enrolled students with comprehensive, ongoing support from multiple sources.**

The experience of many online learning programs is that course completion rates, which historically have tended to be somewhat lower for online

and initiate contact immediately if a student appears to be struggling. Many online programs require instructors to respond to student inquiries within 24 hours. While some programs allow for somewhat longer response times over weekends and holidays, others make no distinction between school and non-school days. These programs understand that students may well be studying on the weekend or over holidays and should be able to receive prompt support. Online instructors should also be flexible, accommodating legitimate student problems, such as illness, by extending assignment deadlines or changing exam dates. Effective online instructors also maintain regular contact with students' parents and school-based coaches.

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The online learning program itself has an important support role to play. Specifically, the program's non-instructional staff should be prepared to step in when technical or other problems cannot be resolved by the online instructor or by someone at the student's school. Effective online learning programs make support staff available during extended hours, especially in the evenings and early mornings when students are likely to be doing their coursework. The UCCP program, for example, offers this kind of support through its student service staff, located in the program's central office at UC Santa Cruz, who are available by email or phone (toll free) to assist students with any administrative or technical problems they may encounter.

Peers and family can also provide critical support to online learners. Students enrolled in the same course should be encouraged to communicate with one

another through email and in online discussion groups. Students studying online may also find it helpful to communicate with other students at their own school who are taking an online course, even if it is a different course. Finally, because parents are important allies in a student's learning process, online instructors, course providers, and school-based coaches should

familiarize them with the expectations of online study and communicate with them regularly, informing them, for example, about course assignments and exam schedules.

Referred to variously as coaches, mentors, facilitators, or site

coordinators, onsite support providers are typically designated by the participating school as part of its agreement with the online learning program. Coaches are responsible for monitoring online students and providing individualized support to help them succeed. These individuals need not be content experts nor, even, teachers. What they should be is creative problem-solvers who, if they cannot answer a student's question or address a problem on their own, know how to find the necessary help for the student, whether from the online instructor, another teacher at the school, or someone in the broader community. School librarians and media specialists are often tapped to play this role, due in part to their proximity to the computers used by online students.

One of the most important roles of a school-based coach is dealing with technology problems and making sure these are quickly resolved by local, district, or program staff. In addition, coaches make sure students maintain adequate communication with their online instructor, keep up with coursework, and submit assignments on time. Coaches are especially

important for those students who are not natural self-starters, as well as those who might be reticent to contact their online instructor for help. Ideally, school-based coaches should be available at the times students are working on their online courses.

» **Prepare students for success in online courses by helping them develop the necessary skills and self-discipline.**

Online learning programs should collaborate with schools in order to help students learn how to be effective online learners. Programs can provide a means for students to evaluate their readiness to take an online course, so that students do not sign up for an online course without the requisite skills they will need for success. Some online learning programs also facilitate student success by providing a learning style assessment through which students can determine the type of learner they are, and then make choices that play to their strengths.

Online students need to learn how to interact with their online instructor and online classmates and how to use associated resources, such as online libraries. They also need to learn how to navigate — both literally and figuratively — their online course and how to submit their assignments. Online learning programs can help online students connect as a community of learners by facilitating interactive online activities, such as newsletters and online discussions, that can help students feel more connected to their peers and teachers, increasing their likelihood of success.

Some online learning programs host orientations at which new or prospective students and their families can learn what online learning entails, view course materials and resources, and take part in a hands-on demonstration of a virtual course. Such orientations are also a good venue at which programs can describe the skills needed for successful online study and the important roles played by online instructors, school-based coaches, and parents.

Technology Needs, Preparation, and Support

» **Provide necessary technology and technical support for students, schools, and instructors.**

Online learning programs must establish a set of minimum technical specifications (hardware, software, and internet connection speed) that schools will need to meet for students to successfully take online courses. To make courses accessible to students in relatively resource-poor schools, providers must make sure their courses do not require state-of-the-art multimedia computers or the fastest internet connections. If virtual courses are designed with this in mind, most schools are likely to already have systems that meet the programs' technical specifications. For those that do not, government or foundation technology grants are often available to help purchase or upgrade to newer systems.

Online learning programs themselves must be able to offer technical assistance to address any network-wide technical problems that impede access to online courses. Such support should, ideally, be available around the clock, seven days a week. Online instructors also need access to the computers and peripherals (e.g., modems), software, high-speed internet connections, and other resources, including technical support, required for them to function effectively.

» **Establish a secure and effective system for shared communication.**

Student information and student work must be secure from unauthorized access. The online learning program's infrastructure should allow for easy and secure transmission from the online grading database to the students, parents, and schools. In addition, the system must provide an easy means for teacher-student and student-student interaction online, as well as a means for program teachers and other staff to monitor online interaction. Teachers and students

must also be able to share files and annotate the materials they share.

The online learning program's Web site and gateway should be user-friendly, able to maintain reasonable speed with many concurrent users, accessible via slower internet connections, and compliant with the Americans with Disabilities Act. To be accessible to all students, irrespective of which system and Web browser each uses, course materials must be usable across platforms. In addition, the technology should accommodate students' different learning styles without being cumbersome or creating technical problems.

For example, the curriculum should frequently include video and audio clips to augment or serve as an alternative to text, but should not attempt to offer all choices for each learning activity, an effort that could overload the system.



Effective Student Assessment

» **Communicate clear expectations for how student progress and performance will be assessed.**

Online learning programs must establish standards and procedures for how student progress and performance will be assessed and communicate these expectations to instructors, students, parents, and school-based coaches. Standards for evaluating progress and performance should include the timeframe within which online instructors will respond to student inquiries, review and return student work, and assign grades. For their part, online instructors must communicate to students their expectations regarding completion of course assignments and adherence to established schedules.

» **Employ multiple assessment methods to measure students' acquisition of knowledge, as well as their understanding and application of that knowledge.**

Frequent assignments that require students to reflect on and apply what they are learning, as well as occasional larger projects that require demonstration of accumulated knowledge and understanding, will likely be more useful than traditional tests for assessing student mastery of online course content. Sometimes, however, teachers need or want to give tests and quizzes.

To assess students' deeper understanding of concepts and materials, online tests should be designed such that students must explain the thinking behind their answers. This is more important for online instruction than for traditional classroom teaching because an online teacher has fewer opportunities for informal assessment, such as observation.

To gain a sense of each student's "voice" and to help students become comfortable expressing themselves, effective online instructors give their students frequent writing assignments.

If the program itself does not require it, online instructors may still want to encourage students to submit assignments for review before grading in order to benefit from feedback and learn how to improve their work. Similarly, as noted earlier, students should be encouraged to participate in online discussions with their online instructor and classmates. Some programs promote such participation by basing a significant portion of course grades on the quality of students' online contributions and interaction. Finally, because many schools and instructors are concerned about the potential for online students to cheat on

exams, online “closed-book” tests can be proctored by school-based staff.

» **Institutionalize practices for monitoring student progress and helping students keep up with the pace of their course.**

Because students can quickly fall irretrievably behind in an online course, closely monitoring student progress is essential. Effective online instructors require students to submit assignments on schedule and contact students right away if they begin to fall behind. Many online instructors and learning programs have found it helpful to schedule automatic emails to students at critical points in the course, for example, to confirm receipt of student assignments or to alert students to missed due dates. Copies of these emails can be sent to school-based coaches and parents to help them monitor the student’s progress. Some online instructors make it a practice to contact students by telephone at the beginning of a course and periodically during the course, which helps promote student engagement and progress. Students, of course, must be able to monitor their own progress and performance; the online course must have a built-in mechanism by which students can readily monitor their assignment completion, access their grades, and view their instructor’s feedback throughout the course.

Professional Development for Online Instructors and Student Support Staff

» **Ensure that online instructors have skills and teaching styles well suited to teaching online.**

Instructors cannot simply transfer standard classroom pedagogy to online teaching because practices that work well in the traditional classroom are not necessarily as effective when the teacher and students are not interacting face-to-face. Online instructors need to become familiar with the various

instructional media available for online instruction — such as video streaming, PowerPoint presentations, and simulations — and learn to use them effectively. Perhaps most importantly, instructors can promote a high level of classroom interaction by being well versed in both synchronous and asynchronous modes of communication. Some programs utilize hybrid methods, such as the “scheduled asynchronous” model used by the Virtual High School (VHS), that enable students across many time zones to have a high degree of interaction while working at their own pace. Online instructors need to be versed in using online teaching and communication tools, such as discussion boards, threaded discussions, and white board technology. Instructors also need to be familiar with the technology used in the online course-delivery system and the Web gateway to services, so they can address issues with online course delivery, such as bandwidth requirements or local restrictions that might impede the use of certain media players, online chats, or other course features.

In addition to requiring online instructors to complete a program orientation, some online learning programs mandate certification of the instructor for teaching online courses. Some require a new online teacher to have a mentor or teach with a more experienced online instructor prior to teaching his or her own course online. In the case of VHS, all teachers are trained entirely online. Using a “model-the-model” strategy, VHS requires prospective online teachers to take a virtual course that trains them to teach online. VHS has found that having teachers complete an online course themselves builds online teaching skills and develops in teachers a firsthand understanding of what students will experience in online learning. Similarly, the Florida Virtual School (FLVS) requires all of its instructors to complete an in-depth training on teaching online; only after gaining experience teaching online will an instructor be allowed to design an online course.

Online instructors also benefit from learning about the emotional and social aspects of online learning

and how best to support students learning online. In addition, because email is likely to be the predominant mode of communication between teacher and students, instructors may need training in email techniques to develop the right tone for their messages to students.

As noted above, one effective way to prepare new online instructors is to pair them with more experienced online teachers who can serve as their mentors. New instructors can shadow and learn the ropes from their mentor teacher prior to teaching their own online courses. Because online instructors generally have no face-to-face contact with students and may have little or no face-to-face interaction with colleagues, online teaching can, for some instructors, feel quite isolating. Online learning programs can support teachers by developing a collaborative model for professional development, bringing online teachers together for training, both in person and online. Programs can also develop electronic means for instructors to share ideas and support one another.

» **Ensure that any school-based coaches have the motivation, time, skills, and understanding to adequately support online students.**

In choosing onsite coaches or mentors, those coordinating their school's participation in an online program should select individuals who have the motivation and ability to provide adequate student support. Coaches must be proactive in monitoring students in online courses and be prepared to help them with all aspects of the course, including content, technology issues, communication with the instructor, and keeping up with the curriculum in a self-paced learning environment. As noted earlier,

school-based coaches need not be content experts so long as they are able to assist students in getting the academic help they need.

Coaches will likely need training and ongoing support from the online learning program to function effectively in this critical role. Above all, they need to have an understanding of what the online learning

experience is like and provide the support students need to be successful. Many online learning programs provide orientations or workshops at which they introduce school staff to some of the key challenges for the online student, such as keeping up with assignments and seeking help when needed, and suggest strategies for monitoring and supporting online learners.

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Policy and Administration Issues

» **The policies, procedures, and structure of an online course program should reflect the program's goals and the needs of the targeted students.**

The policies and procedures of an online course program should be tailored to reflect the needs of the targeted students. For example, if a goal of the online program is to increase the access of underserved students to certain courses, policies and procedures should be designed to promote the participation of students with otherwise limited access to such courses. UCCP makes its courses available free of charge to schools that meet established eligibility criteria that include the socioeconomic status of the school's students and the number of AP and honors courses it offers, thereby giving priority status to students that have the fewest opportunities to take such courses. Similarly, FLVS gives registration

priority to students who attend rural schools and those with few or no AP and honors courses.

Some effective online learning programs delineate administrative responsibilities by academic, technical, and general functions, making sure there is ongoing communication and collaboration among those carrying out each function. Effective student and administrative services are essential to the successful growth of the program; if the program fails to deliver, schools and students are unlikely to continue participating. In addition to having a strong central administration and uniform standards and procedures, programs should be flexible enough to accommodate the divergent operations and calendars of participating districts and schools. For example, a program may dictate a general timeframe within which students need to complete an important assessment, but it should not require that a test be administered on a specific day lest that day conflict with a local district holiday or professional development day during which students would not be at school.

» **Ensure sufficient support for students.**

Programs must ensure adequate support for online students and must encourage them to be proactive in initiating communication with their instructors and coaches. Given the relative isolation in which online students tend to work, they need to have — or develop — the self-discipline to keep up with course assignments, ask for help when needed, and work well independently. To this end, programs can require that participating schools commit the staff time necessary to provide face-to-face student support (e.g., assign an onsite coach). Specific onsite

support functions may vary by school, but should be established explicitly and contractually. Programs must ensure that participating schools provide students the facilities they need to be successful in online courses, such as access to computers,

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internet connection, printers, fax, and email. As noted above, program administrators can make sure students are getting the support they need by monitoring the quality and timeliness of online teachers' responses to student assignments and questions.

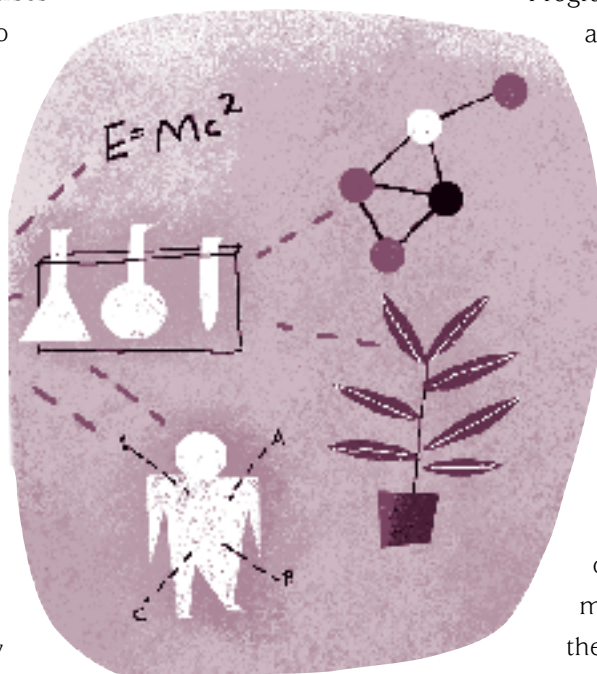
» **Teachers and administrators working for an online learning program should have experience with secondary schools and students and should be available to students during non-school hours.**

Ensuring that students have easy access to and receive timely responses from teachers, counselors, and other personnel in the online learning program may require considerable staffing. Some members of the program staff should be educators with secondary school experience because they contribute content knowledge as well as familiarity with the structure and politics of the high school system. Online learning programs may find it advantageous to allow online instructors to work flexible hours from home; this would enable instructors to be more available to students during non-school hours when students are more likely to need them. Programs will also need to provide their instructors with the technology (from computers to telephones) they need to instruct and communicate with online students.

» **Administrative functions of the program should be efficient, consistent, and timely.**

The non-instructional tasks of the online learning program — such as student enrollment,

information dissemination, and course material or textbook delivery — must be performed quickly and transparently. The program should establish procedures for delivering course materials to schools prior to the beginning of courses and procedures for schools to return them at the end of courses. Data elements required for evaluation and reporting to state or federal agencies should be collected as part of the registration system and course completion process. Program administrators can also monitor student records to ensure that students are progressing through their courses at an acceptable rate as well as to identify any potential problems. It can be helpful for program staff to visit participating schools occasionally to observe firsthand how the program is being implemented, and find out how students and staff are experiencing the program.



programs become more established and enroll larger numbers of schools and students, their per-pupil expenses decline.

Program implementation costs are also considerable. Instruction represents a significant portion of the cost of providing online courses. Some programs have found that hiring part-time rather than full-time online instructors is most economical. According to experts in online education, the maximum student population for a full-time online teacher should be no more than 120 students, and the maximum enrollment per course should be no more than 20 students (Timms & Aronson, 2001).

While smaller teaching loads are desirable, the cost is prohibitive for most programs. While typically borne by the school or district, the cost of providing site-based staff to coach online students can also be significant.

Funding Issues in Online Learning

» **Expect relatively high start-up costs and explore ways to control costs.**

Establishing a comprehensive, high-quality online learning program is an expensive undertaking. Program start-up costs are particularly high due to the up-front costs of developing courses or purchasing courses from vendors. Even though courses must then be regularly updated, and the costs for doing so factored in, many programs have found that once initial course development is completed, their costs decrease significantly; in fact, some programs have been able to produce an income stream by selling the courses they create. Similarly, as online learning

» **Explore various funding models.**

Funding sources for virtual schools and other online programs include per-pupil tuition, state enrollment-based or grant funding, federal grants, and foundation or corporate grants. Frequently, virtual schools and online course programs operate on multiple sources of funding, such as a combination of state funding and per-pupil tuition. One recent study (Clark, 2001) reveals that about three-quarters of the virtual schools charge tuition, while others receive grant funding or state funding based on enrollment. There is some hope that as virtual learning takes hold and demonstrates its potential for providing a cost-effective way to increase access to quality instruction,

states may be more willing to fund virtual education through average daily attendance (ADA). This is what happened recently in Florida, where the legislature passed a law that includes FLVS in the statewide K-12 education funding formula, beginning in July 2003. (Unlike traditional public schools, which receive state support based on the number of students who show up, FLVS will receive funding based on the number of students who complete and pass their online courses — a decidedly higher and more stringent standard.)

However, there has been a gradual movement among online course programs and virtual schools toward a self-funded program model, as most states are reluctant to pay ADA for a student's online courses while, at the same time, funding the student's traditional courses. Thus, most programs charge tuition — per pupil, per school, or some combination of both. In many cases, students within a program's service area (e.g., within a district, a region, or, for a statewide program, the state) receive the courses free of charge or for reduced tuition, while students outside the service area are charged tuition or a higher tuition. Consortium-based models have found creative ways to provide online courses at reduced rates. VHS, the preeminent consortium-based virtual school in the U.S., charges schools a fee to enroll in the consortium, which then provides training to a local teacher and support staff member. For every class taught by a VHS-trained teacher, a school receives 20 student placements in the program's online courses at a nominal fee. Michigan Virtual High School (MVHS), a statewide online program funded by the state, is moving toward a membership model, where member districts can purchase 60 student seats in any MVHS course at a reduced rate.

THERE IS HOPE THAT AS VIRTUAL LEARNING DEMONSTRATES ITS POTENTIAL, STATES MAY BE MORE WILLING TO FUND VIRTUAL EDUCATION THROUGH AVERAGE DAILY ATTENDANCE.

» Explore options for sharing costs and for using existing funds for online learning.

Given states' resistance to providing ADA funds for online learners, in the context of the current economic climate new funding for online learning will likely be hard to come by. One potentially fruitful funding strategy is to reallocate or redirect existing education funds. For example, monies designated for textbooks

could be used to purchase online course materials, and Title I funds at low-performing schools could be used to provide online courses as "supplemental educational services" as mandated by *No Child Left Behind*. In addition, costs for online learning could be shared among schools and districts and through collaborations between K-12 and postsecondary institutions.

Outreach

» Any outreach and marketing plan should be based on an assessment of the needs and characteristics of the targeted students, schools, and communities.

An important early step in developing an online learning program is building awareness of the program among districts, schools, and students. The internet is not necessarily the most effective means of getting the word out to targeted students and schools; programs may need to utilize more traditional methods of outreach as well, such as direct mail and periodical advertising. Marketing efforts should target specific groups, including students, parents, district curriculum directors, school principals and counselors, and county office of education administrators. Particularly important are counselors and subject-matter teachers because they often make decisions about a school's course selection and about which students to enroll

in specific courses. Marketing efforts should be coordinated with the traditional cycle of high school purchasing and curriculum decision-making.

Equally important is establishing program credibility. Some programs benefit from close association with more established programs or organizations. For example, the UCCP Initiative was able to use its connection with the well-respected University of California to do effective outreach to high schools in that state.

Inviting teachers to help select which online courses to offer can help engender cooperation and buy-in from faculty who might initially be concerned that online courses would compete with or supplant a school's regular course offerings. Teaching staff might also be engaged by involving them as site coordinators or coaches, assuming they have the time and inclination. Teachers can even be trained as online instructors, as in the model of VHS, building capacity of teachers while providing opportunities for students to take online courses. The support of school counselors is also important to program success. To gain this support, programs should articulate the potential benefits of online courses. They can do this by making presentations in individual districts or regions, and may also want to present at relevant professional and organization conferences.

In similar fashion, programs can foster parent support by explaining what online study can offer

their children. Parents of prospective students can be invited to view course materials and directly experience various course features. Programs should

target promotional materials to students likely to benefit from them, and resist potential pressure from commercial course vendors to simply maximize student enrollment without regard for their preparation for success. Because many students who will benefit from taking online courses live in remote regions, programs may need to position regionally based staff to promote the program.



Conclusion

The increasing availability of online courses is one way in which the “information superhighway” is delivering on its heralded promise to democratize education by improving learning opportunities for those who, for a variety of reasons, lack equal access to a broad, high-quality curriculum. Web-based courses can provide an important supplement to high school students who would otherwise be limited in their academic pursuits, either because their school does not offer anything more than a very basic curriculum or because scheduling conflicts prevent them from taking desired classes. This can make a critical difference for students, whether they are preparing for post-secondary education in general or for a specific type of advanced education, such as the science student hoping to go to medical school, or whether they simply seek a rich high school learning experience.

Developing a successful online learning program is a complex undertaking that requires considerable funding, time, and collaboration from an array of institutions. Implementation requires widespread buy-in from students, parents, school administrators, and other school staff. It requires patience, as well as the ability and willingness to assess progress and make improvements along the way.

Developing and implementing online courses geared to high school students is a relatively new and rapidly

expanding endeavor. The issues raised in this brief have emerged from the experiences of educators, administrators, and students participating in a variety of online education programs. By addressing these issues, program administrators and participating schools can improve the chances that students, staff, and teachers will have a positive and successful experience with online learning.

The Origins of this Knowledge Brief

This Knowledge Brief grew out of WestEd's evaluation of the University of California College Prep Initiative (UCCP) and the comprehensive compendium of successful online learning practices developed as part of that evaluation. The practices were identified through interviews with national experts in the field of online education and distance learning and a review of international research literature on the topic, which, to date, has focused primarily on implementation issues. The analysis of successful practices was also informed by WestEd's evaluation findings on the experiences of students and school staff who participated in UCCP. Established in 1998 by the University of California Office of the President and funded by the UC system and the State of California, the initiative allows California high schools meeting specific eligibility criteria to enroll their students in online AP and honors courses, free of charge. It now offers some 15 AP courses, 5 honors courses, and 5 college preparatory courses. The full compendium of 125 successful practices in online education, funded by UCCP, is contained in the Phase I Evaluation Report (Timms & Aronson, 2001) and available online at <http://www.uccp.org/program/evaluation.htm>.

The WestEd evaluation team consisted of project director Mike Timms, Julie Z. Aronson, Cathy Ringstaff, and Julie Duffield.

The online learning experts who served as "critical friends" to WestEd's evaluation of the UCCP Initiative and provided consulting on the topic of online learning programs included: Dr. Tom Clark, President of TA Consulting; Dr. Chris Dede, Professor, Harvard University; Dr. Carla Lane, Director of the Education Coalition; Phyllis Lentz, Research Director for the Florida Virtual School; Dr. James Sherwood, Dean of University of California, Berkeley, Extension; and Dr. Cathy Kennedy, Professor, College of San Mateo.

References and Resources

- Bigbie, C. L. & McCarroll, W. J. (2000). *The Florida high school evaluation 1999–2000 report*. Tallahassee, FL: Florida State University. Available online at: http://www.flvs.net/_about_us/pdf_au/fhseval_99-00.pdf.
- Clark, T. (2001). *Virtual schools: Trends and issues. A study of virtual schools in the United States*. San Francisco: Distance Learning Resource Network, A Project of WestEd.
- Clark, T., Lewis, E., Schreiber, J., & Oyer, E. (2002). *Illinois Virtual High School evaluation, 2001–2002: Final report*. Springfield, IL: IMSA/Illinois State Board of Education. Available online at: http://www.imsa.edu/team/ivhs/pdfs/IVHS_FinalRpt.pdf.
- Freedman, G., Darrow, R., & Watson, J. (2002). *The California virtual school report: A national survey of virtual education practice and policy with recommendations for the state of California*. Santa Cruz, CA: University of California College Prep Initiative.
- Gruber, K. J., Wiley, S. D., Broughman, S. P., Strizek, G. A., & Burian-Fitzgerald, M. (Fall 2002). Schools and staffing survey, 1999–2000: Overview of the data for public, private, public charter, and Bureau of Indian Affairs elementary and secondary schools. *Education Statistics Quarterly*, 4(4), 10. Available online at: <http://nces.ed.gov/pubs2003/2003604.pdf>.
- Higher Education Program and Policy Council of the American Federation of Teachers. (2000). *Distance education: Guidelines for good practice*. Washington, DC: American Federation of Teachers.
- National Education Association. (2002). *Guide to online high school courses*. Washington, DC: Author. Available online at: <http://www.nea.org/technology/distanceed/highschool>.
- The Peak Group. (2002). *Virtual schools across America: Trends in k-12 online education, 2002*. Los Altos, CA: Author.
- Russo, A. (2001, October). E-learning everywhere. *The School Administrator Web Edition*. Available online at: http://www.aasa.org/publications/sa/2001_10/russo.htm.
- Southern Regional Education Board. (2001). *Essential principles of quality: Guidelines for Web-based courses for middle grades and high school students*. Atlanta, GA: Author.
- Thomas, W. R. (2002). *Funding Web-based courses for k-12 students to meet state educational goals*. Atlanta, GA: Southern Regional Education Board. Available online at: <http://www.sreb.org/programs/EdTech/pubs/PDF/FundingWebBased.asp>.
- Timms, M. J. & Aronson, J. Z. (2001). *UCCP phase I evaluation report*. San Francisco: WestEd. Available online at: <http://www.uccp.org/program/evaluation.htm>.
- Timms, M. J. & Aronson, J. Z. (2002). *UCCP phase II evaluation report*. San Francisco: WestEd. Available online at: <http://www.uccp.org/program/evaluation.htm>.

The content of this brief was enhanced by the contributions of Peggy Kinder, former director of the Distance Learning Resource Network and a staff member of WestEd's Regional Technology in Education Consortium (RTEC), which is focused on improving the quality of expert technology services, assistance, and support for the lowest-performing districts and schools in the southwest region, and helping disadvantaged learners in the region gain the maximum benefit from using technology.



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