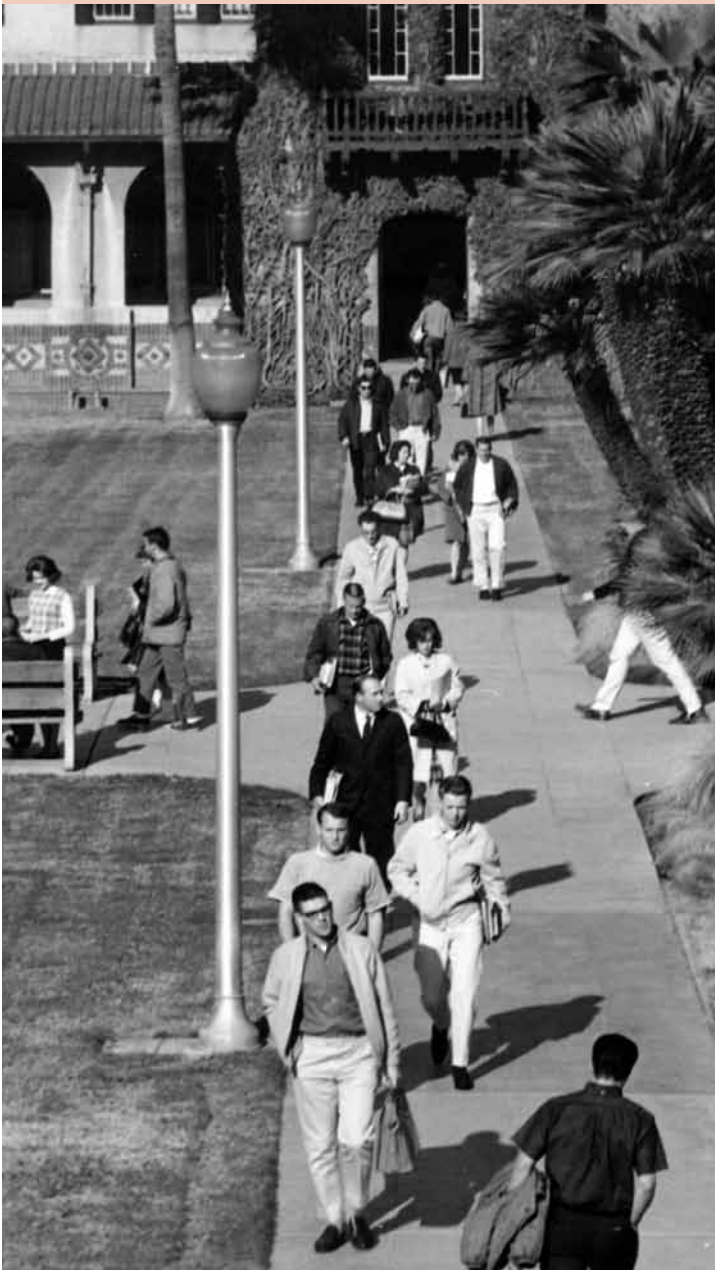




The Master Plan at 50: Using Distance Education to Increase College Access and Efficiency

MAC TAYLOR • LEGISLATIVE ANALYST • OCTOBER 25, 2010



AN LAO REPORT

EXECUTIVE SUMMARY

Distance Education Provides Additional Tool for Advancing Master Plan's Goals. Fifty years ago, California adopted the *Master Plan for Higher Education*, a framework document designed to promote universal access for students and cost-effective coordination among the state's colleges and universities. At the time, postsecondary education generally required students to travel to a campus for in-person classes with an instructor. Today, many students have another option: using technology (primarily the internet) to access instruction wherever they are. The California Community Colleges (CCC) are the largest provider of distance education among the state's public higher education segments, with the California State University (CSU) also offering a considerable amount of instruction using this delivery method. (Currently, the University of California [UC] system's use of the medium is limited, though UC is planning a pilot project that could eventually result in a much more extensive distance-education program.)

Distance education can offer a number of potential benefits to students, faculty, and the state—advantages consistent with the core principles of access and efficiency contained in the Master Plan. For example, distance education can:

- Make undergraduate and graduate coursework more accessible to students who otherwise might not be able to enroll due to restrictive personal or professional obligations.
- Provide opportunities for students attending one campus to find and get credit for courses at other campuses (thereby potentially speeding their graduation).
- Allow campuses to increase instruction and enrollment without a commensurate need for additional physical infrastructure (such as classrooms and parking structures).
- Make possible statewide collaborations, including “virtual” academic departments that are taught by faculty from more than one campus.

Recent research suggests that, on average, postsecondary students who complete distance-education courses learn at least as much as those taking the same courses solely via in-person instruction. Yet, research also reveals a gap in retention rates between students in distance education and face-to-face classes, and many faculty (particularly in the state's research universities) remain skeptical of the value and legitimacy of the delivery method.

LAO Recommendations. While distance education is not—and is not intended to be—suitable for everyone (students as well as faculty), we find that it offers an important alternative means of providing instruction that can complement existing formats and expand options for the state's students and segments. In order to take fuller advantage of this potential, we

believe that the Legislature should guide a clearer statewide vision that specifies data which the segments should collect and report on distance-education students, and which clarifies expectations concerning intercampus collaborations and other partnerships. To that end, we make a number of recommendations. These include:

- Adopting a standard definition of distance education for UC, CSU, and CCC, and requiring the segments to report periodically on student enrollment and performance in distance-education coursework.
- Establishing competitive statewide grants to develop a repository of online curricula that would be made available to faculty throughout the state.
- Requiring that reviews of proposals for new academic programs evaluate whether shared distance-education programs would be a better alternative.
- Directing the Chancellor's Offices of CSU and CCC to study the feasibility of developing online degree-completion programs for persons who started college but never obtained a degree.
- Creating a task force to pursue a public-private partnership with Western Governors University, a Utah-based nonprofit online university of which California is already a member.

Taken together, we believe that these recommendations would help the state make use of distance education in a more effective and coordinated way, thereby enhancing residents' access to a high-quality and cost-efficient higher education.

INTRODUCTION

Traditionally, almost all instruction in postsecondary institutions has taken place in a classroom. The most common forms of instruction involve a faculty member lecturing to, or leading a discussion among, a roomful of students on a college campus. In recent years, however, there has been a significant increase throughout the country in the amount of instruction conducted as “distance education.” By this term, we mean instruction in which faculty and students are in separate locations and communicate using technology. Most distance education is delivered over the internet or with television.

In California, the main providers of distance education are private for-profit colleges and the CCC system, although the CSU system, like many other four-year institutions throughout the country, also offers considerable instruction using distance education. To date, UC’s use of distance education is limited (though, as discussed later, UC has begun planning for a pilot project). Colleges cite several benefits of distance education for their students and institution. For example, by limiting the need to travel to a campus to attend a class, distance education can make instruction more accessible for various types of nontraditional college students—including working adults, parents and other caregivers, members of the military, and residents in remote areas of the state. Also, distance-education programs can allow colleges to increase substantially instruction and enrollment without the accompanying need for new facilities such as classrooms and parking lots. In addition, because distance education is particularly well suited for intercollegiate cooperation and collaboration, it can provide increased opportunities for students

to find and get credit for taking courses at other campuses (thereby potentially speeding their graduation), and even for colleges to create comprehensive and cost-effective joint academic programs. These potential advantages—increased access, more efficient use of facilities, and enhanced coordination among campuses—are consistent with key principles adopted by the state 50 years ago in the *Master Plan for Higher Education*. (This publication is part of a series entitled *The Master Plan at 50* that discusses various aspects of the plan.)

At the same time, the growth of distance education has been a source of concern for some, particularly faculty at four-year universities (such as in the UC system). Many question, for instance, whether students can learn as much in distance-education courses as they do in a face-to-face environment. Others express continuing concerns about the degree to which colleges can ensure the academic integrity and honesty of students who complete a large share of coursework (including testing) outside the immediate supervision of an instructor.

The expansion of distance education and debates about its potential benefits make it an important issue for the Legislature and others to examine. To help facilitate such an examination, this report provides an overview of distance education—including its prevalence, data on learning outcomes, and funding—as well as recommendations to improve state oversight and overall program efficiency and effectiveness. While private institutions also use distance education, this report focuses primarily on the three state-funded higher education segments of CCC, CSU, and UC.

OVERVIEW OF DISTANCE EDUCATION

What Is Distance Education?

Distance education (also commonly referred to as “distance learning” or “e-learning”) refers to courses in which students and faculty do not have to be in physical proximity to each other for instructional purposes, and communicate using technology (such as the internet or television). Distance-education courses can be either *synchronous*, meaning that faculty and students communicate with each other in real time, or *asynchronous*, in which a student can choose when to access lessons and send communications. For example, under synchronous distance education, a faculty member in one location (such as on the main campus) can use a monitor and microphone to see, hear, and instruct students who are joining the class “live” from off-campus sites. Asynchronous mediums include online course sessions that students can participate in at any hour of the day via a personal computer. (See the nearby text box for a fuller description of asynchronous instruction.)

There are various levels of distance-education courses at colleges. For example, a college might offer a course in which students do not have to appear on-campus for any class sessions, with all course content delivered via distance education. In contrast, other courses deliver a portion of content via distance education, but require students to attend class a limited number of times for face-to-face instruction (such as to perform laboratory experiments). This type of instruction is often referred to as *hybrid* (or *blended*) distance education. There also are courses that require students to attend all classes in person, but include an online component that allows students to check grades, turn in assignments, and

participate in discussion groups. This latter group of courses, often called *technology-enhanced instruction*, is not considered distance education. Rather, educational entities usually set a threshold (such as 51 percent) for how much instruction must be delivered via television, the internet, or other modes during a given academic term in order to be considered distance education. As discussed later in this section, however, there is currently no consensus among distance-education researchers and providers about where to set that threshold.

Evolution of Distance Education. It can be said that distance education is both old and new. Distance education originated over a century ago in the form of “correspondence” classes, in which students and faculty communicated through the mail. Later, communication technology such as videocassettes and cable television expanded distance-education opportunities. It was not until the growth of the internet in the 1990s, however, that distance education experienced its tremendous growth.

Nationwide Trends. According to the Sloan Consortium, which studies national trends in online education, over 4.6 million students took at least one online class at their college or university in the fall of 2008. (This amount increases to about 5 million when all other types of distance education, such as television-based instruction, are included.) Sloan defines “online” courses as those with at least 80 percent of content delivered via the internet and no more than 20 percent of instruction provided via in-person classes. Sloan’s estimate of 4.6 million students represents one-quarter of total enrollments in postsecondary institutions for that

time period. Moreover, enrollments in online courses have experienced double-digit growth in each year since the Sloan Consortium began its reporting in the fall of 2002. (During this same period, *total* enrollments in postsecondary institutions have grown an average of less than 2 percent annually.)

Distance Education at California's Community Colleges

As Figure 1 (see next page) shows, in just ten years, distance education at the community colleges has gone from a minor program to a relatively major one. In 1999-00, about 115,000 students in the CCC system took at least one

TAKING AN ASYNCHRONOUS ONLINE CLASS

Typically, students enrolled in a traditional on-site course must attend class at an assigned time and place, and spend class time listening to an instructor or participating in discussions with the instructor and other students. Given that asynchronous online courses are neither live nor in person, what is the "classroom" experience like for distance-education students?

While courses vary, online students may do the following:

- "Enter" the classroom by going to the campus website and providing a student identification number and password.
- Read the instructor's announcements on the classroom website, such as reminders about upcoming reading requirements and project deadlines. (While they can attend class any time of day and from anywhere with an internet connection, students are usually given a time frame—such as midnight at the end of each week—by which they must complete required assignments and examinations.)
- Access an audio or video presentation, or read a text-based lecture.
- Participate in instructor-facilitated discussions with classmates by typing comments and observations in an online forum (or "discussion board"). (Students' grades are often based in part on the frequency and quality of these "posts" about course material.)
- Take quizzes and examinations online (unless required by the instructor to be in person), and submit assignments (such as research papers) using a "drop box" located on the classroom website.
- For certain science classes, conduct experiments using an at-home laboratory kit. For speech and other classes, film one's self using a webcam and submit the videos electronically to the instructor.
- Access online support services, such as tutoring and academic counseling, and email the instructor with questions (or post on the classroom website).

class via distance education (out of a systemwide headcount of 2.5 million). By 2009-10, the total number of students in the CCC system had risen relatively modestly, to 2.8 million (an average annual growth rate of 1 percent). Yet, over the same period, the number of students taking a distance-education course had grown to over 600,000—an average annual growth rate of 19 percent. (The CCC system defines a course as distance education when more than 50 percent of content is delivered through the internet, television, or related delivery method—as opposed to the Sloan Consortium’s threshold of 80 percent.) Despite a reduction in the number of overall CCC students between 2008-09 and 2009-10 due to budget cuts, the number of distance-education students increased.

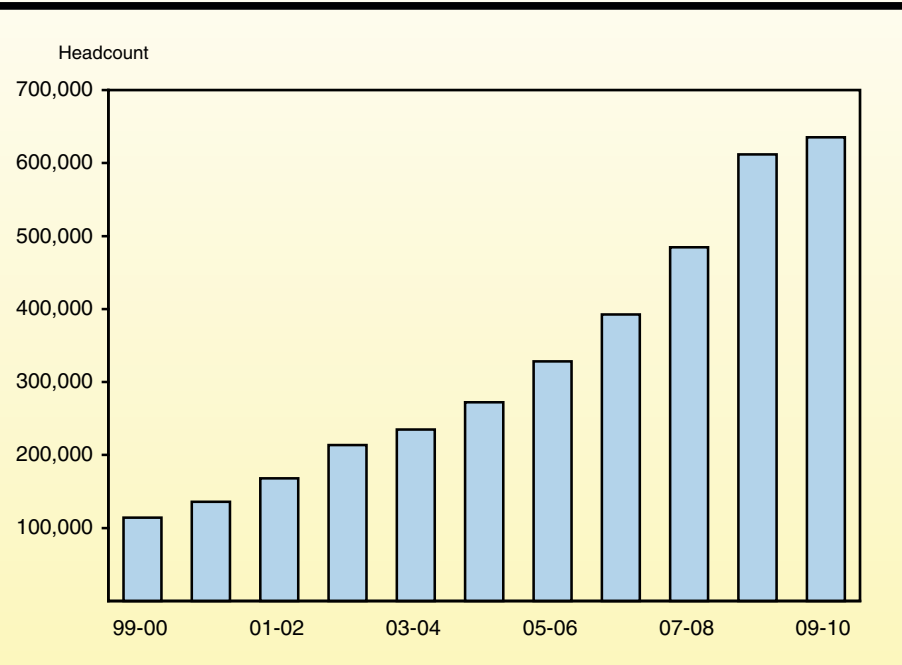
Distance-education coursework taken by these students in 2009-10 was the equivalent of 120,000 full-time equivalent (FTE) students, or about 10 percent of total credit FTE students served by the CCC system. This compares with just 1 percent of total credit FTE students in 1999-00. (One FTE represents a certain number of instructional hours provided to a student taking a full load of coursework during an academic year.)

As Figure 2 shows, about 85 percent of distance education is delivered via the internet. (The vast

majority of this internet-based instruction is delivered asynchronously.) The second largest delivery method is through television. This latter category includes live and interactive “video-conferences” between faculty and students, and previously recorded lessons delivered to students through cable television, videotapes, and other means. Lesser-used delivery methods include instructional software programs and audiotapes.

Distance-education instruction is offered at virtually all of the CCC system’s 112 colleges. The largest providers include Coastline College (Orange County), Palomar and Southwestern Colleges (San Diego County), Santa Monica College (Los Angeles County), and Foothill College (Santa Clara County). Coastline College, Barstow College (San Bernardino County), and Palo Verde College (Riverside County) serve over 40 percent of their students via the

Figure 1
Distance Education Has Grown Significantly at Community Colleges Over Past Decade



distance-education medium. Colleges offer instruction in many fields of study, with the largest volume in the social sciences (such as sociology and political science), business, English, mathematics, and computer/information technology. Some colleges offer students the opportunity to complete an entire academic program without taking any courses on-site. Coastline and Foothill Colleges, for example, offer over a dozen associate's degrees and certificates entirely via distance education.

Distance Education at California State University

According to the Chancellor's Office, all of CSU's 23 colleges offer courses via distance education (generally online). Systemwide enrollment data, however, are unavailable. This is because, unlike CCC, the CSU Chancellor's

Office does not collect this information from campuses. Colleges also do not share a standard definition of what constitutes a distance-education course. Based on our discussions with CSU staff, it appears that certain campuses have become relatively large providers of distance-education instruction. For example, CSU's East Bay, San Marcos, Chico, and San Diego campuses report that at least 10 percent of their students take at least one online course (generally defined as at least 50 percent course content delivered online).

According to the Chancellor's Office, most of these students appear to be undergraduates who take one or more distance-education courses as part of their degree requirements. The CSU does not offer any bachelor's degrees that can be obtained fully via distance education. Instead, the system offers 20 bachelor's degree

completion programs, in which students can complete all upper-division requirements online or through other distance-education technology. In addition, graduate students can obtain a total of about 40 master's degrees and teaching credentials online.

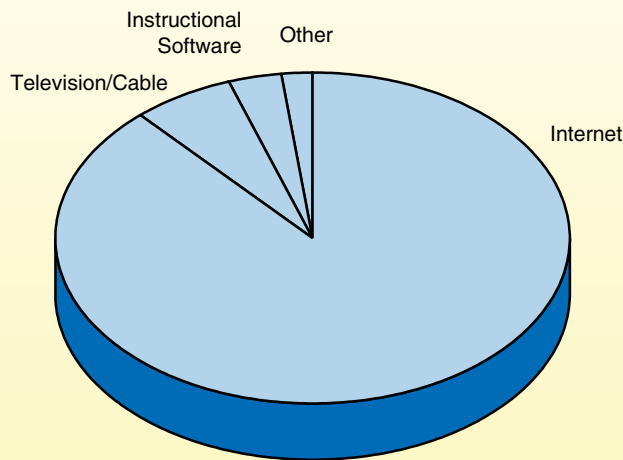
Pilot Project In the Works at UC

Currently, the UC system offers very little state-supported instruction via distance education. The UC

Figure 2

Most Distance Education at the Community Colleges Is Delivered Via the Internet

2009-10



Office of the President estimates that there are between one dozen and two dozen online courses offered to students throughout the system. (The system does, however, offer many courses via distance education through its fully fee-supported extension program.) Historically, UC faculty (like faculty at many other research institutions) have been concerned about whether the quality of distance-education classes matches that of on-site instruction. Also, UC has traditionally maintained that an important part of a student's collegiate experience involves participation in on-campus activities (such as public symposia and performances)—extra-curricular activities that online students cannot readily attend.

At the same time, some faculty and staff in the system have promoted distance education as a possible means to deliver a high-quality education to eligible students who might not otherwise be able to attend UC. To address the issue about quality (as well as others such as faculty workload and cost), UC officials recently received support from the UC Regents and Academic Senate to introduce a pilot project within the next year or two. The plan is to pick 25 to 40 undergraduate general education and premajor courses and select interested faculty to design a fully online equivalent. These faculty members (as well as possibly other faculty in the system) would then teach the courses to students. Afterward, researchers would evaluate learning outcomes among students in these classes. Depending on the results and input from faculty, UC could move in a variety of directions, including:

- Offering online classes in highly specialized subjects, thereby allowing students at one campus to take advantage of faculty expertise at another.

- Offering online certain high-demand classes for which enrollment is otherwise difficult for students.
- Offering fully online degrees.

Intersegmental Collaboration

Distance-education programs are generally planned and operated at the segment and campus level. There are a few notable instances of distance education-related collaboratives among educational segments in the state, however, including:

- Since 1999, the state has funded the California Virtual Campus (CVC) as part of the CCC budget. The CVC administers an online catalog of courses that are offered via distance education at CCC, CSU, and UC, as well as by various private colleges and universities. The purpose of the catalog is to serve as a "one-stop shop" for students seeking to take classes outside their home campus (where the course might be full, offered at an inconvenient time, or not offered at all).
- The CCC budget also includes funding for the "@ ONE Project," which provides training (primarily online) to faculty on how to use technology more effectively in both distance education and classroom-based instruction. All services are available to faculty and staff in the three public higher education segments, as well as K-12.
- In 1997, CSU founded Multimedia Educational Resource for Learning and

Online Teaching (MERLOT). The program is a repository of free online course materials that are available to faculty both inside and outside of California. The MERLOT collection includes complete online course curricula (consisting of syllabi, audio and video lectures, assignments, and tests) that faculty may use in

whole or in part for their own instructional purposes. Much of this material comes from faculty at institutions such as the Massachusetts Institute of Technology and Carnegie Mellon University, which, as “open courseware” universities, publicly publish their course curriculum online.

ASSESSING THE EFFECTIVENESS OF DISTANCE EDUCATION

As distance education has become more widespread, there has been an increased national focus by educators and policymakers on its value and legitimacy as an alternative instructional strategy. This section addresses several issues concerning distance education, including: (1) state law and other policies concerning expected standards for distance education, (2) national research on student learning outcomes, (3) student completion rates, (4) concerns about academic integrity and potential for fraud in distance-education courses, and (5) overall opinions of distance education by faculty.

Distance-Education Courses Subject to Same Standards as On-Site Counterparts.

Currently, distance education is generally held to the same standards as traditional face-to-face courses. For example, state law expresses legislative intent that courses and educational programs provided through distance education contain the same “quality, course content, (student) achievement levels, and coherence of curriculum” as classroom instruction. Each segment has in turn adopted internal policies that conform to these principles. In addition, each segment’s accreditation body

holds distance-education courses to the same standards (quality, content, and rigor) as those delivered in-person.

National Research Suggests Similar Learning

Outcomes for Online Courses. While colleges are required to adhere to the same standards of course quality regardless of the delivery mode, an important question remains: Can students learn as much in distance-education classes as they do in a face-to-face environment? Earlier national research on video-based courses found no significant differences in learning compared with traditional classroom instruction. (The research did identify more-favorable learning outcomes in “teleconference” classes—in which students and faculty can engage in live two-way interactions—as opposed to televised “broadcasts” with only one-way communication from an instructor to students.)

In 2009, the United States Department of Education released a comprehensive report on online learning. The report reviewed 46 previously published studies which compared online courses (including hybrid courses) with traditional classroom-only instruction. To ensure that the findings were broadly applicable, the studies

either randomly assigned students to face-to-face or online classes, or statistically controlled for differences between students in the groups (such as prior knowledge of course material). While the research included a handful of studies on K-12 students, it focused primarily on adult learners (undergraduates at two- and four-year colleges, graduate students, and professionals receiving occupational training). Based on a review of these studies, the report concluded that students completing online classes learn more, on average, than those taking the same classes solely via in-person instruction. In addition, students in courses that blend online and traditional classroom instruction tend to perform best of all. The study is careful to note, however, that superior learning outcomes may not be attributable to the online delivery method *per se*. Rather, the authors suggest that fully or partially online classes tend to give students more time to engage and reflect on course material (such as by repeating lectures and exercises), as well as additional opportunities to interact with faculty and collaborate with peers.

A recent paper by the Community College Research Center reexamined the studies in the federal report. The paper limited its evaluation to only those studies that compared fully online, semester-long classes with face-to-face instruction, and involved undergraduate and graduate students (thereby excluding research on hybrid instruction, any classes that were less than a semester in length, or involved K-12 students or professionals seeking job-related training). Based on its examination of these selected studies, the paper's authors argue that the evidence to date suggests that fully online classes are on average equal to—but no better than—face-to-face instruction for postsecondary students. The paper also cautioned

that since the students in the studies appeared to be generally well-prepared for college-level coursework, such findings about online education may not necessarily be generalized to underprepared college students.

Retention a Challenge for Distance

Education. While postsecondary students who complete online courses may learn at least as much as those in entirely on-site ones, other national research reveals a gap in student *retention rates* between distance education and on-ground courses. Based on our discussions with CCC and CSU staff, there appear to be several possible reasons for lower completion rates in distance-education courses. For instance, some students enroll in distance-education classes because they are under the impression that these classes are easier than on-campus classes. In fact, staff contend, it generally takes more discipline and self-motivation for students to succeed in a distance-education class—since they are typically not required to appear in an instructor-led classroom at an assigned time. Other students may find that a distance-education program is not a good fit because they feel a sense of isolation absent face-to-face interactions with instructors and fellow students. Campus staff also suggest that distance-education students may tend to have more personal and professional obligations (a reason why they may have opted to take such classes in the first place), which might cause them to drop the class at higher rates than others. In addition, many campuses cannot yet deliver the same quality of support services to online and offsite students as they do for students on-campus. For instance, while certain activities (such as access to library services) are widely available online, our review found that other

services that promote student success (such as tutoring and a support program for low-income CCC students) are often less readily available to off-campus students. This, too, may contribute to lower completion rates among students taking distance-education classes.

Colleges Lack Uniform Standards to Ensure Academic Integrity of Distance-Education Courses. Quality educational programs of *all* types require policies or controls that discourage and detect cheating and other forms of academic dishonesty. In recent years, there has been an increased focus on this issue as it relates to distance education. For example, how can institutions and potential employers know that someone taking a test online (and thus out of the instructor’s line of sight) is the same student that is enrolled in and receiving credit for the class? While on-ground classes could have similar issues (a student in a large class may pay someone to take a final examination, for instance, and the instructor may not require students to show identification), there is a perception by some that academic fraud and dishonesty are more prevalent in distance-education programs.

In part as a response to these concerns, Congress passed the Higher Education Opportunity Act in 2008. Among the provisions contained in the legislation was a requirement that colleges establish policies and processes ensuring that “the student who registers in a distance-education course or program is the same student who participates in and completes the program and receives the academic credit.” As the bill was being drafted, many higher-education officials expressed concern that the language would require institutions to put into place costly student-authentication systems.

To address these concerns, Congress added language stating its intent that, for the time being, institutions only require students to provide a user name and password when logging into an online class. The clarifying language also included an expectation that institutions consider the use of other “identification technologies” (such as cameras attached to students’ computers) as they become “less expensive and more mainstream.”

Our review of CCC and CSU found a lack of uniform standards with regard to student verification in distance-education courses—though it should be noted that there is no uniformity for on-campus courses, either. Policies for classes vary from campus to campus, and even instructor to instructor. For example, in some cases, instructors require students in online classes to take at least one examination in person. More typically, students are able to complete all of their coursework requirements outside the line of sight of college staff.

Many Faculty Members Remain Skeptical of Distance Education. While distance education is more pervasive than ever, many higher education faculty remain wary of the medium. This is particularly true for faculty at four-year institutions. For example, a 2009 survey conducted by the Sloan Consortium found that 44 percent of chief academic officers at two-year colleges agreed with the statement that “faculty at my school accept the value and legitimacy of online education” (with an additional 44 percent responding “neutral”). This compares with just 11 percent at four-year institutions (with another 56 percent responding neutral). A 2009 survey of faculty opinions by the Association of Public and Land-Grant Universities provides additional details on faculty viewpoints at four-year institutions.

For example, over 80 percent of respondents who have never taught an online class believe that the learning outcomes of online courses are “inferior” or “somewhat inferior” compared with those delivered in-person. In addition, almost one-half of faculty who *have* taught online feel that learning outcomes are inferior or somewhat inferior to classroom-based instruction. Yet, the majority of those who feel that online learning outcomes are somewhat inferior have nevertheless recommended them to students as a way to complete needed coursework.

While we are unaware of any comparable survey of UC, CSU, and CCC faculty, based on our discussions with faculty and administrators, there appears to be a wide range of viewpoints about distance education among segments and across certain campuses. Concerns among some faculty (particularly at UC) are likely to persist until segments can better gauge how the instructional medium affects students’ learning experiences, as well as other issues such as academic fraud.

FUNDING AND COSTS OF DISTANCE EDUCATION

How Are Distance-Education Courses Funded?

As with on-site classes, UC, CSU, and CCC campuses receive funding for distance-education instruction based primarily on the number of FTE students that they serve. The per-FTE student funding rate, which differs by segment, is not affected by delivery method. Traditionally, one FTE student represents a certain number of classroom (contact) hours provided to a student taking a full load of coursework during an academic year. This is a convenient workload measure for classes in which faculty and students have regularly scheduled meeting times (such as face-to-face lectures and live teleconferencing). With asynchronous online classes, however, there is no set number of hours for instructors and students to interact. (In fact, faculty and students might never appear online at the same time.) To accommodate this unique feature of distance education, the segments have modified their enrollment-calculation methods to take into account the total amount of time that students are expected

to spend on their coursework—as opposed to simply in-class “seat” time. This approach converts these hours into credit units, which produces a comparable number of FTE students for purposes of calculating enrollment funding. (Please see the nearby box for more detail.)

Fiscal Impact on Students

From a student’s perspective, taking classes via distance education can cost less than attending on-site. For example, students who otherwise would have to travel to campus for instruction save money on transportation and parking costs. Students with a family may be able to avoid child care costs by taking classes from home. (Of course, these savings could be offset by additional costs—such as for a computer and home internet access—to the extent students would not have otherwise made these purchases had they taken face-to-face courses.) Community college fees are the same (currently \$26 per unit) for both distance education and on-site classes. Fees for distance-education classes at CSU are generally the same as their on-campus

counterparts, with a few exceptions at select campuses charging more for distance education.

Fiscal Impact on Campuses

How does the cost of providing distance education compare with providing instruction in the traditional classroom environment? Our review suggests, in addition to the primary benefit of improved access, there are potential savings to using distance education.

There are numerous cost drivers of instruction. As discussed below, *net* costs for distance education may be lower than site-based instruction, due in large part to savings on physical plant-related expenditures. In addition, distance education creates opportunities for campuses to collaborate on the design and delivery of instruction—with potentially significant cost savings.

Instructional Costs Similar. Some costs are no different for distance education and on-site courses. For example, CCC and CSU campuses that offer both delivery methods report that instructional costs are comparable. Given

similar workload levels, campuses generally use the same student-to-faculty ratios for both methods. In addition, CCC and CSU use a similar proportion of full- and part-time faculty to teach both types of classes. (This is not the policy at all systems. For example, Rio Salado Community College in Arizona generates significant cost savings relative to other community colleges in its district by using part-time faculty almost exclusively to teach online classes.)

Technology-Related Costs. Video- and internet-based courses often impose a number of one-time and ongoing costs for technology. Examples of these costs include software and equipment, as well as technical support for faculty to design and teach online courses. In the past, such costs were often considered supplementary to campuses' traditional instructional expenses. Increasingly, however, campuses are equipping brick-and-mortar classrooms with audiovisual and computer technology (so-called "smart" classrooms), and many face-to-face classes include an internet component (which enables students to play back classroom

HOW CAMPUSES COMPUTE FULL-TIME EQUIVALENT (FTE) STUDENTS FOR DISTANCE EDUCATION

The University of California (UC) and California State University (CSU) define one FTE undergraduate student as 30 semester units of credit. Like most higher education systems in the country, one semester unit for a typical course represents one hour per week of classroom time, plus an expectation of two hours per week of outside-class time (such as reading course material and writing papers)—for a total of three hours per week of student workload for the semester. For a distance-education class without traditional classroom time, UC and CSU assign one semester unit of credit to a course that expects a total of three hours per week of effort by students (without differentiating between time spent inside and outside the classroom). The California Community College system employs a similar method of converting classroom hours into units and FTE students.

lectures, submit homework electronically, and participate in online discussions with classmates). As a result, the difference in technology costs incurred by online and face-to-face courses has diminished considerably. We do not believe it to be a major consideration for comparisons of the cost-effectiveness of these modes of instruction.

Facilities-Related Savings. Several higher education systems report that distance education can provide an overall net savings relative to site-based instruction through lower facilities-related costs. This includes operational costs such as utilities and building maintenance, as well as long-term savings on capital outlay. By educating online those students who would have otherwise attended class in-person, for example, colleges can reduce the need to build new infrastructure such as classrooms and parking lots. Research at the University of Texas found that lower infrastructure-related costs resulted in average per-unit savings of \$90 a year for the delivery of online instruction relative to campus-based instruction—or roughly \$2,500 per FTE student in general operating, bond, and other funding sources. A 2009 report to the Board of Trustees by CSU East Bay suggests a comparable level of savings from distance education.

Savings Through Collaboration. In addition to generating savings by decreasing the need for physical space on campus, there are significant opportunities for higher education systems to reduce instructional costs through collaboration and partnerships. For example:

- Community colleges and universities in British Columbia operate a collaborative whereby online courses are developed by various faculties (often the top scholars in their respective fields) through a request-for-proposal process funded

by the government. Course materials (including the syllabus, assignments, and tests) are then made available to other instructors throughout the system to use. By consolidating the design of courses and promoting the sharing of materials, investment in development can be leveraged many times over and instructors' time can be freed up to focus on other priorities.

- The Washington State Community and Technical Colleges recently received a grant from the Gates Foundation to develop an open course library. Under the grant's terms, system faculty are selected via a competitive process to convert 81 of the system's most commonly offered on-campus courses (transfer-level as well as precollegiate) to material that can be accessed online. When completed, faculty both inside and outside the system will have free access to this content for fully online, hybrid, or "technology-enhanced" classroom instruction. The grant also includes a condition that system faculty assign course materials that cost no more than \$30 per student. To do that, faculty might choose course textbooks and other materials that are available for free on the internet (commonly referred to as "open content"), or they might choose inexpensive published materials. The intent of this requirement is to improve student retention by keeping student costs low.
- Several higher education systems have created efficiencies by forming partnerships that share instructional responsibilities in a given field among campuses.

For instance, eight of the University of Texas campuses participate in a joint online master's of business administration program. Under the partnership, each campus' business department provides two of the degree program's courses (such as marketing and accounting). In so doing, the state avoids having to support a comprehensive array of business faculty at each of the system's campuses.

- The Great Plains Interactive Distance Education Alliance is an interstate consortium of 14 public research universities that offers graduate certificates, master's degrees, and some undergraduate courses in a number of academic fields. The online programs are structured to facilitate access to postsecondary education in fields where no single university could cost-effectively administer a program alone. Students are admitted to and graduate from a "home" university and take courses from several of the participating institutions.

- The state of Indiana recently formed a partnership with the Western Governors University (WGU). The WGU is a fully accredited (national as well as regional), nonprofit, online private university (based in Utah) that was founded by the governors of 19 western states in the 1990s. (California joined at a later date.) Under the agreement, WGU will operate a branch in Indiana called "WGU Indiana." Indiana also enacted a new law allowing state residents to apply state financial-aid grants toward attendance at WGU (even though the university is technically located out of state). The state will not provide any base funding for the university's operational costs, as they are fully covered by tuition revenue. (Tuition for a full academic year costs about \$6,000 for most undergraduate and graduate degrees.) The goal of Indiana's collaboration with WGU is to increase the number of graduates—particularly for nontraditional students—with minimal cost to the state.

DISTANCE EDUCATION IN CALIFORNIA: WHERE TO GO FROM HERE?

Fifty years ago, California faced an impending surge in the number of students seeking a college degree. In response, state policymakers adopted a framework for higher education based on core principles such as universal access, high-quality instruction, and cost containment. To mitigate costs, the Master Plan stressed strategies such as "better utilization of physical facilities" and the need for planning and coordination to prevent "unnecessary

duplication" by institutions. As we have discussed in reports over the past year on the Master Plan, the state today is facing a different challenge: how to boost enrollment and completions to address a projected shortage of college-educated residents. Yet, the same general goal and principles—the need to maximize education opportunities given limited resources—remains the same. And while the Master Plan was written in the context of traditional classroom-based

education, the emergence of new tools for the delivery of instruction also can be applied in support of the state's higher education objectives.

Distance education is not—and is not intended to be—suitable for everyone (students as well as faculty). Yet, as illustrated in the above analysis, it offers an important and growing means of delivering education that can complement existing formats and expand options for students. We expect in coming years that a large majority of students will receive at least a portion of their postsecondary education through distance education. For some, it may be a hybrid course or program that combines face-to-face instruction with online lessons, assignments, and discussion sessions. Others may take a few fully online courses (including some taught by faculty at other campuses) that fit into their work and personal schedule. A growing number of students with time and place restrictions will have access to fully online degree programs.

Like other aspects of higher education, the Legislature has generally allowed the segments and individual campuses to develop their own policies concerning distance education. For instance, the Legislature has allowed educational providers to adopt their own definitions of the medium. Yet, given the growth and potential of distance education, we believe that it is both appropriate and desirable for the Legislature to provide more guidance on a statewide vision for distance education, including expectations concerning the segments' use of public resources for the program.

Due to its nature, distance education can offer advantages to students, faculty, and the state that are not readily attainable with a campus-based educational model. In order to

take full advantage of this potential, however, campuses must collect better data on distance-education students. In addition, campuses must collaborate more with each other. While there are a few examples of such partnerships, we believe that there is significant room for better coordination and integration. To move in this direction, this section puts forward several issues for legislative consideration. The intent of these recommendations is to increase the overall effectiveness and efficiency of instruction in the state by improving distance-education accountability, planning, and coordination. Figure 3 summarizes our recommendations.

Common Definition of Distance Education Needed

We recommend that the Legislature adopt a standard definition of distance education for segmental reporting purposes.

As discussed earlier, about 10 percent of instruction in the CCC system is currently delivered via distance education. The CCC system classifies a course as distance education if over one-half of instructional content is delivered when faculty and students are not in the same physical place. By contrast, CSU does not employ a standard definition. For example, one campus may use 50 percent as the threshold, while another may use a different percentage. As a result, CSU is not able to determine the total number of students (headcount and FTE student) enrolled in online or video-based courses. This makes it impossible for the Legislature and segment to measure workload and track enrollment trends. To make cross-segmental comparisons possible, we recommend that the Legislature adopt a standard definition of distance education. We think the 50 percent

standard already used by CCC makes sense for this purpose.

Report on Distance-Education Student Enrollment and Outcomes

We recommend that the Legislature require all segments to report periodically on enrollment and performance-related data pertaining to distance education.

Every two years, the CCC Board of Governors requires the Chancellor’s Office to submit a report on distance-education programs in the system. These reports include information such as the number of students enrolled in distance-education classes and student completion rates. Currently, neither the CSU nor UC system compiles a comparable report. In order to improve state oversight of distance education, we recommend that the Legislature require all segments to submit periodic (such as biennial) reports containing workload and key performance data such as:

- The number of students served via distance education at each campus, broken out by delivery method.
- Course completion rates of those students.

- Program completion rates for fully online degree programs.

It would be useful to have the segments break out student enrollment and outcomes-related data by demographics such as age, gender, and ethnicity.

Build on State’s Existing Foundation to Expand Distance-Education Collaboration

We recommend that the Legislature consider a number of opportunities to integrate distance-education efforts in ways that enhance students’ access to instruction and create institutional efficiencies, including (1) streamlining educational pathways for online students, (2) promoting the sharing of curriculum across

Figure 3

Summary of LAO Recommendations

- ✓ Adopt a standard definition of distance education for the state’s three public higher education segments.
- ✓ Require the segments to report periodically on student enrollment and performance in distance-education courses.
- ✓ Require the California Virtual Campus and California State University (CSU) to provide status reports on implementation of a planned online transfer pathways project.
- ✓ Establish competitive grants to develop a repository of online coursework that would be made available to faculty throughout the state.
- ✓ Require the review of new programs to consider the possibility of the shared distance education programs instead.
- ✓ Require the Chancellor’s Offices of CSU and the community colleges to study the feasibility of establishing an online degree-completion program for state residents who started college but never obtained a degree.
- ✓ Create a task force to pursue development of a Western Governors University “virtual campus” in California.

campuses and (3) encouraging collaborative academic programs.

Streamline Pathways for Online Students.

As discussed earlier, the state funds an online catalog of distance-education courses offered by the three public higher education segments (as well as some private colleges). While CVC can be helpful, its utility is limited. For example, a community college student who identifies a course of interest at another college in the system has to go to that college's website, complete an application form, receive a new student identification number and password, and register for the class. Students also are responsible for transferring credits earned from the course back to the home campus (typically by petitioning an academic counselor). Community college students interested in transferring to an online program at CSU face even more difficulties, as they must navigate among CSU's degree requirements, the state's intersegmental repository of transfer agreements, CVC's online catalog, and potentially numerous campus registration websites.

A more convenient system would allow students to plan their education using a single website, enroll directly in classes they need, and immediately determine whether the course is accepted for credit at the home campus. A new joint project involving CSU East Bay, CVC, and several community colleges in the San Francisco Bay Area could improve this process for students who are attending college online. Initially, this project—the California Online Program Planner—will allow transfer-seeking CCC students to select an online program at CSU East Bay and identify (1) what courses they will need to earn the degree (lower-division courses at CCC and upper-division courses at

CSU) and (2) participating pilot campuses where transferable courses are offered (and whether there is an available seat). In the second phase of project implementation, students would be able to register for these courses from one website (using the same identification number and password) and “check off” their academic progress against degree requirements as they successfully complete their courses. The intent is to eventually expand beyond the handful of participants in the pilot project and include other CCC and CSU campuses throughout the state.

The CVC estimates an approximately 18-month time frame for the first phase of the project, followed by a two-year implementation period for the second phase. As this project is still in the planning stages, we recommend that the Legislature require CVC and CSU to provide periodic reports on their progress.

Facilitate Sharing of Online Curriculum Across Campuses. Traditionally, faculty that develop curriculum for face-to-face courses do not share it with faculty at other campuses. Generally, we found that this practice has carried over to courses developed for distance education at the segments—despite the relative ease with which online coursework can be made available to colleagues. Notably, while CSU heads MERLOT (and the CCC system is a partner), faculty from these two segments generally borrow from—rather than contribute to—the collection of online presentations, assignments, tests, and other learning material. This lack of sharing across campuses and segments has several disadvantages, including duplicative spending of state resources (courses can cost tens of thousands of dollars each to develop) and forgone opportunities to share thoughtful coursework with other educators.

A more cost-effective approach would be for faculty to make their content available to colleagues for reuse. To facilitate sharing, we recommend that the Legislature earmark a small portion of each segment's existing funding for the development of distance-education courses. The funds would be awarded to faculty on a competitive basis to either design new or modify existing coursework. To assure quality, the course would be reviewed by other faculty in the field. As a condition of receiving the grant monies, faculty would agree to make the learning materials available on MERLOT. (The intellectual property rights would remain with the original developer.) These materials would be available to all of the state's educational segments—including K-12 faculty, who may wish to adapt the coursework for their advanced-placement or precollegiate courses—for use in online, hybrid, or technology-enhanced classroom instruction.

Foster Collaborative Academic Programs.

Just as students are able to participate in coursework regardless of their location, distance-education technology makes it feasible for faculty members from various campuses to co-develop and administer collaborative programs. Educational systems such as the University of Texas have combined faculty and students across multiple colleges (both within and outside the segment) to form "virtual departments." In so doing, states can offer more cost-effective and comprehensive instructional programs than they might otherwise be able to absent the partnership. This can be particularly true for more-specialized degree programs with relatively low enrollments at individual campuses. By aggregating geographically separated students, for example, campuses can ensure

classroom-size efficiency, while connecting students to a potentially larger network of faculty expertise.

We think that there are actions the state can take to foster such collaborative programs. For example, as discussed in our December 2009 report, *The Master Plan at 50: Improving State Oversight of Academic Expansions*, state law provides the California Postsecondary Education Commission (CPEC) the authority to review segments' proposals for new programs and make recommendations regarding those proposals to the Legislature and Governor. The CPEC uses several program review criteria (such as student demand and societal needs) to evaluate the merits of the proposals. In our 2009 report, we suggested that CPEC also consider the extent to which there are alternatives that could achieve the proposal's goals more efficiently or at a lower cost. We believe that this consideration should include an evaluation by CPEC regarding the potential to use shared programs whenever campuses propose new degree programs. Adopting this criterion would compel the segments to consider alternatives that use distance education to collaborate with other campuses.

Consider Online Degree Completion Program Targeted at Re-Entry Students

We recommend the Legislature direct CCC and CSU to study the feasibility of developing an online degree completion program aimed at state residents who started college but never obtained a degree.

According to the Lumina Foundation, there are approximately 42 million people in the country who enrolled in a four-year college

at one time, obtained some credits, but never graduated. California's share of this total is roughly 5 million. (It is likely that there are a few million more persons who attempted but never completed a CCC associate's degree.) While it is likely that many former students would benefit from completion of their studies, other obligations (personal and professional) often make it difficult for them to go back to school in a traditional campus-based program. A more viable alternative to attending college in-person may be to take classes online.

Texas Program Model. Acknowledging this need and opportunity in Texas, the University of Texas system is scheduled to launch a "Bachelor's Accelerated Completion" (BAC) program beginning in the fall 2011. The program is designed for re-entry students who have already completed approximately 60 units of college credit (equivalent to the first two years of a four year degree). Potential students apply to a BAC degree program at one of three campuses. Campus advisors identify the courses that students must take to complete their bachelor's degree. Courses in the program will be fully online, taught in compressed seven- to eight-week terms, and use faculty from multiple campuses.

Study Feasibility of Similar Program in California. We believe that there is potential for such a targeted degree-completion program in California. We recommend that the Legislature direct CSU and CCC to study the feasibility of designing a similar program at their respective segments, and report to the Legislature on their findings.

Create Task Force on "WGU California"

We recommend the formation of a joint legislative-executive task force to pursue

development of a model along the lines of Indiana's recently announced partnership with WGU.

Indiana's New Partnership With WGU. As discussed earlier, Indiana recently established a partnership with WGU that is designed to raise residents' awareness of and access to the nonprofit online university. Under the agreement, Utah-based WGU governs the new branch through its existing board of trustees, with guidance from an advisory board of Indiana officials and other prominent leaders from the state. Financially needy WGU Indiana students can use state grants to offset tuition costs. Indiana does not contribute any additional state funds in support of the university. Like other WGU students, incoming WGU Indiana students with previous college experience can transfer approved credits toward a degree. (The WGU currently offers bachelor's and master's degrees in teacher education, business, information technology, and health care.) Additional credits are awarded based not on "seat time," but rather on students' ability to demonstrate mastery of core competencies (as developed by WGU faculty in consultation with business and industry representatives). This approach allows advanced students to complete their program in an accelerated manner.

Recommend State Task Force. Currently, about 1,900 Californians attend WGU out of a total nationwide enrollment of about 20,000. Officials at WGU note that while the virtual university has room to accommodate more students, there is a general lack of awareness among the public about the institution. In addition, we note that there is a disincentive for financially needy residents to enroll at WGU because state law limits students' use of state

financial aid (the Cal Grant) to in-state colleges.

We believe that, as a member of WGU, the state would benefit by more fully leveraging WGU to educate residents (particularly working adults) in need of affordable and flexible postsecondary options. Based on our review, the WGU Indiana model seems suitable for California. Recognizing the need to lay the appropriate groundwork for such an endeavor,

we recommend the creation of a task force composed of legislative representatives and members of the administration. The task force would be charged with identifying the steps that need to be taken to establish a WGU California. After concluding its analysis, we recommend the task force report its findings and recommendations to the relevant policy and budget committees of the Legislature.

CONCLUSION

In this report, we have discussed nationwide research and trends pertaining to distance education, and provided an overview of the delivery method in California's three public postsecondary systems. Generally, we find that distance education can serve an important supplementary role alongside traditional classroom instruction. In addition, we find that

there are several opportunities for the Legislature to provide direction and guidance so that higher education can make use of distance education in a more coordinated and strategic way. Doing so could further enhance students' access to high-quality postsecondary studies, as well as create statewide efficiencies.

LAO Publications

This report was prepared by Paul Steenhausen, and reviewed by Steve Boilard. The Legislative Analyst's Office (LAO) is a nonpartisan office which provides fiscal and policy information and advice to the Legislature.

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