memorandum

Date: January 15, 2012

To: California Community Colleges Chancellor’s Office

From: WestEd and the RP Group

Question 8: Technology and Support Services

How could technology be used to provide quality support services to students?

Background

Research indicates that students who make use of campus support resources such as orientation, assessment, counseling (career, education, and personal), and student education plans have a higher rate of positive outcomes than students who do not. However, many students do not avail themselves of these resources, and California’s community colleges are becoming less able to provide these services as enrollment continues to rise while funding decreases. Thus, the Student Success Task Force recommends integrating student-friendly technology to increase access to support services, while preserving face-to-face interactions. The Task Force’s draft recommendations note particular potential for supporting entering students by enabling them to self-manage their academic pathways with such tools as secure student portals (which allow students to access personalized information such as grades and progress on education plans) and online student advisement systems (which provide access to information on topics such as transfer requirements and career planning).

The promise of online support extends beyond student empowerment. These systems can aggregate data within and across campuses, facilitating administrators’ ability to analyze information on student outcomes in order to target resources. By eliminating the need for self-directed students to see a counselor to get answers to basic advising questions, online tools may also increase colleges’ abilities to provide much-needed face-to-face services for students who are less self-directed.

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While some colleges have attempted to build comprehensive technology systems that provide access to student data and meet students’ self-advisement needs from one online portal, most individual campuses have not had adequate resources to develop these integrated multi-application systems. Therefore, community college systems in some states have pooled resources to develop and institute systemwide portals that allow users to choose a college, select classes, create education plans, attend virtual orientations, and prepare for assessments, among other things. (Some of these systems are profiled in the Examples section at the end of this report.)

Online and other technology-enhanced student supports have also been developed to address the needs of students taking courses online. Examples of these supports include orientation to online learning, early-alert systems to flag students who are dropping behind, online synchronous counseling sessions, and online learning communities. In California, online course sessions and student participation in distance education courses almost doubled from 2005–06 to 2009–10.3 Distance learners now make up nearly a quarter of the student population. Resources developed for these students could potentially be expanded for students who enroll in face-to-face courses as well. However, the fact that online students have lower course completion rates and experience greater social isolation from the campus community raises important questions about the ability of online resources to adequately provide the support services that help students succeed.

The California Educational Technology Collaborative (CETC) currently provides a number of systemwide online tools for students. For example, all California community college (CCC) students utilize CCCApply to enter the California community college system. Students may also use a web interface called Assist to look up how credits earned at one California public college or university can be transferred to another. Finally, eTranscript efficiently transfers transcripts across colleges in the CCC, California State University (CSU), and University of California (UC) systems.

All of these tools are useful at the system level because community college students often take classes at multiple colleges and may transfer between systems. While the California Community Colleges Chancellor’s Office does not have the authority to mandate use of these online tools, two of them have been implemented at all CCCs. After Assembly Bill 1056 (made into law in October 2011) required all community colleges to use eTranscript, that system was universally implemented. CCCApply was universally implemented after colleges were offered incentives to pilot the application.

In June 2011, the California Virtual Campus (part of CETC) partnered with a commercial firm called MyEdu to provide online education planning systems, including tools to plan degree paths, schedule courses, manage credits, develop degree timelines, and select courses. A number of community colleges will pilot in-depth use of this system over the coming years, but use is not mandatory. Some colleges and districts within the CCC system have also developed their own proprietary systems for education planning, course selection, and career planning, while others are using modules developed by enterprise resource planning (ERP) systems.4

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Scenarios for Implementation

Technology-enhanced student support services can be made available in a number of ways. For example, students may access individual tools through an openly available website, log into a password-protected portal that includes multiple applications associated with a student profile, or engage with self-paced modules in a campus computer lab. Examples of technology-enhanced supports include

- online textbook purchasing services;
- online counseling and support groups via email and/or discussion boards;
- synchronous or asynchronous individual tutoring/coaching/mentoring;
- online access to library resources and library orientation;
- student technical support for utilizing online and library resources;
- student assessment via online survey/test interface;
- self-directed career advisement, college selection, transfer guidance, and education and schedule planning;
- online student orientation modules;
- integrated support systems for online academics, such as early alert systems that notify students, faculty, and retention specialists that an online student is falling behind and needs intervention; and
- online systems that allow colleges to track student performance, outcomes, use of counseling, and other factors that enable faculty and student services staff to provide more tailored support.

Even with the most basic technology-based services, there are likely to be significant logistics involved in effective startup and maintenance. Issues to consider both before and during the implementation process include

- whether to institute an online tool or application at the college level, systemwide, or with other education partners (K–12, workforce investment boards, CSUs, etc.);
- whether to develop a stand-alone service or an integrated “one-stop shop” portal (for instance, some services might be better provided individually, while other services might be more effective if they are bundled to enhance uptake);
- how to foster adoption across sites if a tool is to be offered systemwide. (will this require legislation to mandate use, or will adoption be voluntary and encouraged by a careful process of building alliances?);
- whether there needs to be consistency across, or integration of, college data systems;
- how the support tools will be integrated with existing campus systems such as the campus website and learning management systems;
- whether to build custom systems or work with an outside vendor;
- how technology supports will be integrated with on-campus student support systems;
- how to secure start-up costs for licensing, hardware, software, and coordination;
- what ongoing costs and required capacity for staff support and maintenance will be (some innovations may, at least initially, increase staff workloads);
how privacy concerns about confidential data are addressed;
what method will be used to confirm the identity of authorized users;
how to build administrator, staff, and faculty buy-in for using these systems;
what types of staff and faculty training are needed so they are able to use technology tools;
how to market new technology-enhanced systems to students and whether to mandate the use of these systems; and
how to provide orientation, training, and technical support for students.

Research on Technology and Support Services

Colleges are increasingly using technology in the student support arena. The shift to provide more online options is driven by a variety of factors, including declining budgets, growing enrollments (on campus and online), increased accountability, changing student expectations (for self-serve, just-in-time, customizable, interactive, integrated, and consistent services), and competition among institutions for scarce resources.  

Much of the literature on technology-enhanced student support is focused on providing support for students in distance learning/online education programs, although Floyd and Casey-Powell discuss how online student support services can benefit both distance learners and on-campus students.  

The Western Interstate Commission for Higher Education Cooperative for Educational Technologies (WCET) is a group that works to evaluate and advance the most effective uses of technology in higher education. Shea and Armitage of WCET developed the following list of questions that institutions should ask themselves when developing online student support services:

Are the services designed from the student’s point of view, but tempered with the knowledge of the veteran staff? Are they seamlessly integrated, as appropriate? Are they interactive, providing real services online — not just information online about using available offline services? Do the services accommodate all users … students, staff, and others as appropriate? Are the services flexible to accommodate customization by various departments or colleges? Will the services automate tasks to free staff to spend more time on personal services?

Developing and integrating online student support services is often an ongoing, multi-phase process with a range of implementation goals and issues at each phase. In a paper describing best practices in delivering innovative student support, Burnett outlines four phases, or “generations”:

· Generation 1: Content. Information is presented in ways that parallel the physical organization and processes of the institution.

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- **Generation 2: Content in Context.** Information is channeled for population segments (e.g., prospective and matriculating students and the relevant services for each population).

- **Generation 3: Customization, Personalization, and Community.** Information is aggregated and integrated into “one-stop” systems that provide personalized and customized services for the student. Transaction services, communication tools, and portals are provided.

- **Generation 4: High Tech/High Touch.** Services are developed “to establish and nurture a relationship between the student and the institution. Some of the identifying features include process orientation from the student’s point of view, decision-making tools, personal recommendations, proactive communications, and real-time interaction with the institution.”

Floyd and Casey-Powell write that while Burnett’s conception might appear to be a progression that reflects increasing uses of technology, “the progression really reflects an enormous shift in the way institutions have traditionally operated and there is a plethora of policy, turf, financial, and cultural issues to address with each advance.”

The literature cites examples from many colleges regarding best practices, but provides little evidence to support why those practices are held in high esteem. For example, Shea and Armitage mention that Colorado Community Colleges Online — a consortium comprising the 13 community colleges in the Colorado Community College System that offer online courses — has virtual admissions representatives to answer questions, accept applications, and provide orientation information, but there is no discussion of whether those options work better for students than do in-person services.

### Examples of Community Colleges Using Technology to Provide Support Services

Some California community colleges have developed, or are developing, online counseling and advisement systems. Most are asynchronous and involve email, online forms, or message boards that allow students to submit basic questions to counselors who will later respond by email. Some are synchronous and utilize chat rooms and/or conferencing software to allow for real-time communications between counselor and student. For instance, Los Angeles City College, Coastline Community College, and the State Center Community College District all offer counseling sessions via live chat rooms. Some online counseling systems use web conferencing to provide one-on-one and group counseling sessions (two of these systems are described below). In 2008, the Academic Senate of the California Community Colleges passed a resolution (8.01) in support of online counseling services, calling for the Senate to “develop written documents describing effective practices for the provision of online student services in the California community colleges.”

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San Diego City College has an **online counseling program**, which provides comprehensive career, academic, and personal counseling appointments and workshops, as well as an e-walk-in hour. This is a synchronous system using real-time communication between students and counselors. The online counseling program is intended to provide live counseling and advising to both on-campus and online students. The system also includes an unsecured email tool (known as “Ask the E-Counselor”) for quick general questions. Workshops and appointments use an online meeting center (using WebEx technology), which allows participants to meet and talk in a secured real-time meeting room with two-way voice over Internet protocol (VoIP) and video conferencing capability.

This online counseling program was introduced in 2006 and is available to all students in the San Diego Community College District, although it was originally planned specifically for distance learning students. Students can access the system website any time to schedule appointments and use online tools, but counseling services are only available on weekdays from 1 to 8 p.m.

Sierra College has a **synchronous online counseling program**, as well as a newly implemented asynchronous system for email exchange. The live chat function, developed to relieve pressure on counselors, allows students to send in a quick question rather than scheduling a 30-minute in-person appointment. It proved so popular that specific time windows needed to be instituted for this service. Individual online counseling, which allows counselors to share screens and upload materials such as education plans or CSU requirements, has worked well for tech-savvy students. However, this service has required additional support from front-desk staff because students who are less tech-savvy need to be walked through the process of logging on to the counseling system. Sierra College plans to offer online group counseling webinars on topics such as transferring to the University of California. The counseling staff has found that students benefit from hearing questions and comments from other students in addition to communicating with the counselor. Group sessions may also relieve counselors’ workloads.

The **Virginia Community College System** first implemented its postsecondary education and career planning tool in 2009. The Virginia **Education Wizard** uses a portal to enable students to determine majors, compare costs of different colleges, identify transfer pathways, apply to college, and use information about personal preferences to plan an education pathway to a future career. The Education Wizard links information such as local salaries and occupational demand with information related to education offerings in the community college system. Students can determine which majors to choose and which courses to take to become eligible for jobs in their communities, as well as store and create academic and career plans.

Due to strong interest from the state’s K–12 education system and from other postsecondary institutions, the Education Wizard is now accessible to students from a number of institutions. To date, the system has 750,000 unique users, or 1 in 10 of the state’s population. Preliminary data suggest that students who used...
the system were more likely to have persisted to the next semester and to have achieved a GPA of at least 3.0 than were students who had not used the system.\textsuperscript{14}

**Valencia College** in Florida implemented LifeMap, a developmental advising system that incorporates an integrated online portal,\textsuperscript{15} in 2002. Through a single log-in interface, students can access more than a dozen computer-based applications, including education and career planning tools, online registration, online payment, transcript requests, a financial planner, an online portfolio, a tool that provides local labor market information, course management tools, and online learning communities and groups. The interface allows students to track their education progress over time and receive automated communications about their education progress. Labs on each of the college’s campuses allow students to get help using the software. As a result of the LifeMap suite of initiatives, first-time students’ fall-to-fall persistence rates have increased from 58.5 percent in 2001–02 to 67 percent in 2007–08.\textsuperscript{16}

**South Orange County Community College District** has developed My Academic Plan (MAP), an academic planning system for students that supports credit transfer and degree and certificate planning. Launched in 2007, MAP was designed to supplement, rather than replace, the work of experienced counselors. MAP is integrated with the statewide Project Assist transfer articulation database and allows students to specify an education goal, select a college and a major, and determine appropriate transfer-preparation and major-preparation courses. The program also has access to student transcript data within the district and can show students which requirements they have met and which they still need to meet to reach their goals.\textsuperscript{17} Desired courses can be organized into a semester-by-semester plan, which is fully integrated with the district’s registration system.\textsuperscript{18}

The district is also developing an integrated module called Sherpa, which proactively prompts students to take action on their education plans. For example, a student with a GPA below 2.0 would receive a text or email to see a counselor, whereas a student with a high GPA might receive a message to get involved in an honors program. This system of prompts will work similarly to the Amazon.com website, in which suggestions are based on the user’s background and preferences. South Orange County Community College District is also adapting many of its online student applications for smartphone use.\textsuperscript{19}

**Central Piedmont Community College** in Charlotte, North Carolina, developed an Online Student Portal Learning System (OSPLS) that went live in 2004. The system includes four integrated components, including multiple student assessments for exploring personality traits and career

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\textsuperscript{14} Herndon, C. (telephone interview, November 14, 2011). Virginia Community College System.


\textsuperscript{18} Gaston, J. (personal communication, November 18 & 23, 2011). South Orange County Community College District.

\textsuperscript{19} Ibid.
aspirations, a student profile, and an orientation course. It provides links to college counselors and instructors and allows them to send early alerts if students are having trouble in class. Data are kept and tracked by semester. Overall, Central Piedmont Community College found that from 2004–08, students participating in all aspects of OSPLS were 8.7 percent more likely to complete the courses in which they were enrolled and 9.36 percent more likely to persist from spring to the subsequent fall semester.\textsuperscript{20} Students’ first-term retention rate reached 87 percent, which was considerably higher than the campus’s overall historical retention rate of 60–70 percent.\textsuperscript{21} The college is now training other colleges to replicate this program.

\textit{Research and writing by Lisel Blash, RP Group.}

\textsuperscript{20}Central Piedmont Community College. (2011, November). \textit{Next Generation Learning Challenges Identifies CPCC’s Online Student Portal Learning System as Vital Student Retention Tool, Awards $250,000 Grant to College.} Retrieved from \url{http://www.cpc.edu/news/next-generation-learning}