CALIFORNIA COMMUNITY COLLEGES

TIPS News

Technology in Education

TELECOMMUNICATIONS INFRASTRUCTURE PROJECT STATEWIDE

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Technology Plan II for California Community Colleges

Dr. Fred Sherman
Vice President of Information Services & Technology
Butte College

The California Community Colleges Chancellor's Office (CCCCO), in conjunction with a shared governance committee called the Telecommunications and Technology Advisory Committee (TTAC), has been working on a major update to the systemwide technology plan for California community colleges.

The previous technology plan (Technology Plan I) created several major infrastructure initiatives which 1) established network interconnectivity linking CSUs and community colleges (4CNet), 2) instituted standards for satellite communication, and 3) facilitated statewide video conferencing. Additionally, Technology Plan I strengthened the library's use of the technology and provided resources for technical training.

The purpose of the second plan, Technology Plan II, is to address

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CCCSAT Explores Direct Broadcast Education

CCCSAT Staff

This is the third in a series of three articles on the technology that runs CCCSAT.

The mission of the California Community College's to bring education to everyone requires broad vision and design. The California Community College Satellite Network (CCCSAT) multiple and varied delivery mechanisms develop that vision. Sherilyn Hargraves, CCCSAT Project Director, defines CCCSAT's goal as "providing technology delivery modes for higher education and for education throughout California."

The satellite uplink at Palomar College and the downlinks on community college campuses open up the possibilities for transmissions of video based courses to community college classrooms throughout California. CCCSAT's use of satellite transmission of video courses to individual campus receive sites is only the beginning. Within two years, those courses should also be in individual homes.

Broadcasting courses on local pub-

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SUMMER

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off the wire

CVC CENTER ANNOUNCES AWARD FOR INSTRUCTIONAL WEB SITE

The CVC Professional Develeopment Center is pleased to announce that the California Virtual Campus (CVC) will award a $2,500 prize recognizing an exceptional instructional Web site at a California community college.

The CVC Teaching Web site Award is sponsored by Pearson Education, whose publishing imprints include Addison Wesley Longman, Allyn & Bacon and Prentice Hall. The award will be presented at the CVC Online Learning & Higher Education Conference at the Resort at Squaw Creek near Lake Tahoe, October 22-24, 2000.

In order to qualify for the award, a site must have been used for teaching an online course during some term in the calendar year 2000. Nominated Web sites will be judged on educational content, site design, use of multimedia, interactivity and community, and accessibility. College presidents, chief instructional officers, and distance education coordinators have been invited to make nominations, which are due by Friday, September 8, 2000.

For more detailed information, please visit the CVC Professional Development Web site at *http://pdc.cvc.edu*

GROUP RELEASES STANDARDS FOR PREPARING TEACHERS TO USE TECHNOLOGY IN THE CLASSROOM

Julianne Basinger
The Chronicle of Higher Education

The International Society for Technology in Education, as part of a federally supported effort, released national standards and recommendations this week for colleges to use in preparing teachers to use technology effectively in their instruction.

The nonprofit group, based in Eugene, Oregon, last fall received a three-year, $2.2-million grant from the U.S. Department of Education to develop the standards. The grant came after federal and private studies had found that most teacher-training programs failed to show their students how to incorporate technology into their teaching.

The new standards (*http://cnets.iste.org/teachstand.html*) describe what beginning teachers should know and be able to do with technology. Those skills include using technology in developing curricula, assessing students, and increasing professional knowledge.

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Online Advising:
Two Colleges – Two Models

Nicholar Chang
City College of San Francisco

Belen Torres-Gil
Rio Hondo College

A closer look at how these community colleges are using technology to guide their students along the academic path.

Introduction

Technology has forever changed how people access information and interact with each other and with institutions. The prevalence of distance educational programs is a response to the demands placed on educational institutions by this changing society.

As community colleges create ways of providing quicker, better and more convenient access to their educational services, student support services such as enrollment, advising and counseling find themselves facing the same challenges. How can students enroll for classes from a distance? How can they get accurate information on college policies and procedures from a distance? How can they get sound academic and career advice from a distance?

Several community colleges have taken up this challenge and are approaching this task in a variety of ways. This article will provide an overview of two distinct but complimentary approaches to providing online advising/counseling services to prospective students, classroom students and distance education students by San Francisco City College and Rio Hondo College.

San Francisco City College

Online Advising began in the summer of 1997 at City College of San Francisco (CCSF). It was designed to address the informational needs of a changing student population, one that is increasingly juggling time for work, play, family and learning. Online Advising creates flexibility in accessing academic advising and student support information for a population that needs flexibility. Also, a less obvious but equally important objective for Online Advising was to create a more student-friendly image for the College.

The technology involved with Online Advising at CCSF simply uses e-mail. An *ADVISOR@CCSF.ORG* e-mail account is established and marketed in the Class Schedule and College Web site. Specific counselors are assigned to check this inbox daily, seven days a week. Liaisons with other key offices and departments, such as Admissions and Records, Foreign Students Admissions, Financial Aid and some major departments have been established. Staff from those units are designated to handle questions that they are in a better position to answer. The Online Advisor answers the majority of the questions and occasionally refers questions to those units. The tone of the response is consciously polite and encouraging. The maximum turnaround time is forty-eight hours with the desired target being twenty-four hours.

The benefits to the public and the students are obvious. They can ask just about any question about CCSF and get an individualized answer. They do not have to be referred from office to office, and sometimes to the wrong office. They do not have to take time out to come on campus to seek out this information, nor are they limited by office hours. They get a consistently friendly and encouraging tone in the replies. Students are invited to make an appointment to talk with a counselor if their questions require additional information from them as well as more discussions.

This service has been very successful judging by the feedback sent in by users of this service and by the number of e-mails that have been received. The Online Advisor receives between three hundred to a thousand e-mails a month, the latter during the peak period, which is about two months before and one month after the beginning of a semester. The largest number of inquiries, 50 percent, is about enrollment (e.g. "When do I take the placement test for enrolling in the Fall?" or "I sent in my application three weeks ago and have not heard from anyone.") The second largest number of inquiries, 35 percent, is curriculum or academic in nature (e.g. "Can I take CHEM 101 at CCSF to satisfy my SFSU requirement?" or "I want to get a Computer Networking Certificate. What courses should I take?"). The number for the rest of the inquiries break out

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CONTENT v. CONTEXT

Michael P. Lambert
Executive Director,
Distance Education and Training Council

A debate is quietly taking place in number of academic journals and books these days on the intrinsic worth and relative effectiveness of distance learning versus traditional classroom learning.

The arguments are scarcely new. In fact, they date back to the days of William Rainey Harper of the University of Chicago in the late nineteenth century. But in the past year, scholars who assert that distance learning is another "fad," like teaching machines or programmed instruction, have given the forces opposed to the "tsunami" of distance learning a fresh voice. Most vocal are classroom professors who view distance learning as nothing more than an industrialized commodity that is being foisted on students in homogenized, cookie-cutter packages. Their chief objection is that so long as professors are part-time and are paid on a piece rate basis, there will never be quality in distance learning.

The anti-distance movement asserts that it is the context of where and how learning occurs that is the true benchmark of quality. It does matter, to them at least, that there is a palpable chemistry between the professor and the student. It also matters that there is an academic environment in which to learn, and that it is the interchange of verbal and non-verbal messages that transpire in this environment which characterize a worthwhile, true, learning experience. Vituperative books and studies are making an all-out assault on distance learning. I suspect some of this earnest effort is motivated by the fear of losing jobs, tenure, and academic freedom. Who wouldn't fight the movement with these sacred cows at stake?

The Contest Between Context and Content

Most distance educators are content oriented. To them, learning can take place anytime, anyplace, and anyway. The professor, while not irrelevant to the process, is less the dispenser of knowledge and more the facilitator of it. Content rules. The true learning takes place when the individual learner interacts with the materials and applies the knowledge or skills. A live professor standing in front of the learner is not a necessary or even a sufficient ingredient for learning to happen. Having full-time faculty is not a requirement to achieve quality: it is the demonstrated outcome of the learning, not the process that matters to the content supporters.

I recall a contextual learning experience I had in my university days some 35 years ago. The professor was a gentle, much-venerated scholar in his seventies, a full-time tenured faculty member revered for his knowledge of John Milton. One sunny day in May, he entered an overheated classroom where 22 of us were jammed into tiny chairs, glanced out of the window, looked about blinking, and said, "Class dismissed. The hawthorns are in bloom!" It was the shortest and best class on Milton I ever had, and one of the only lectures from my college days that I can recall today.

I think it is unfortunate that a small but vocal subset of traditional educators is fighting against a century-old method of education. Distance learning isn't perfect, it certainly isn't for everyone, and its shortcomings are well documented. But classroom instruction, as valuable as it has been for centuries, isn't immune to change an improvement.

I submit that there is place in academe for both contextual learning and content learning. I see a day when no one method of learning will dominate, when all learning will use a variety of media and employ a variety of styles. The role of the viva voce professor reading from yellowed notes will evolve into a remote facilitator/mentor/tutor working one-on-one with students in a learning contract custom-designed for that learner. Technology, particularly the Internet, is already transforming how, when, and where people learn from "real" professors. The Internet is allowing the contextual traditionalists a wonderful opportunity to enrich their learning content, enhance their instructional style, and allow for more creativity than we could have thought possible a generation ago.

It is my hope that the debate of context versus content dies away quietly, so that all of us can get on with the business of creating and offering the best possible learning opportunities in the world, using every means at our disposal.

Class dismissed. The hawthorns are bloom!

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Technology II Plan

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several emerging issues affecting the community college mission as outlined below:

1. The increased enrollment from students who will be entering community colleges in the next decade (Tidal Wave II) will create additional demand for technology services that can only be met by additional investment into the infrastructure.
2. The ability to use the Internet has become a required job skill, both a means of communication and as an expanded source of information, and these skills must be taught to students by educational systems including community colleges.
3. Many faculty do not have appropriate technology training for finding and using the right technology tools to achieve the desired instructional outcomes.
4. Community colleges have large inventories of obsolete equipment and inadequate support staffs, making their technology resources costly to support and leading to poor training environments for students.
5. The lack of adequate technology planning by some community colleges leads to poor utilization of existing and future resources.
6. The need for electronic access to Internet resources continues to grow exponentially and already 19 percent of community college sites will be at capacity in a matter of months.
7. Without deliberate consideration, planning, and implementation, access to information technology resources will be constrained for students with disabilities

Technology Plan II has been limited in scope to only address two major goals: improving student access and student success. Other important areas affecting technology were not included in the plan such as those technology needs for supporting administrative and student services functions. These will be addressed in future planning efforts. Also, Technology Plan II primarily addresses information technology assets and does not include non-computer technology commonly in use on community college campuses.

The intent of Technology Plan II is to provide a baseline level of technology for students, faculty and staff, to meet the following goals:

- A ratio of 1 computer for every 20 students
- A computer for each full-time faculty member, adequate access to computers for all part-time faculty, and computers for appropriate administrative and support staff
- A three year replacement cycle for computers
- Access for students, faculty and staff to: printers, their local area network, office productivity software, virus protection software, e-mail, the Internet, and other key information resources.
- 10 percent of all workstations equipped for disabled access
- Staffing for technical support as well as direct assistance to students and faculty
- Ongoing technical training for faculty and staff

The development of a budget for implementing Technology Plan II was based upon a concept called the "Total Cost of Ownership" or TCO. The TCO model aggregates and averages all one time and recurring costs associated with purchasing and maintaining hardware/software as well as training users how to maintain and use the equipment. With the assistance of GartnerGroup, a well-known international consultant in information technology services, TTAC developed an estimate of the TCO for the average community college resulting in a figure of $3,506 per computer. When taken at face value, this TCO value means that each computer costs the college an average of $3,506 annually to acquire and support.

The result of the Technology Plan II will be a multi-year budget/funding request to augment the existing base funding to community colleges in technology. The current budget plan includes $27.9M of augmentation for fiscal year 2000-01, $145.3M for 2001-2, $15.7M for year 2002-03, $18.8M for year 2003-04, and $4.8M for year 2004-2005 but this budget is also subject to revision as noted below.

Technology Plan II is now going through a review (and subsequent modification) with the Consultation Counsel and the Board of Governors. After approval, the plan will need funding authority by the legislature for implementation, so Technology Plan II still has some hurdles to cross before its benefits will be visible on community college campuses. T

COMMENTARY

9 Rules for Good Technology

Stephen Downes
Information Architect
Faculty of Extension, University of Alberta

Today's educational technology is like a Rube Goldberg contraption. Enter any technology enabled classroom or other facility, and you will see a mish-mash of computers with associated wires, video displays, modems, video conferencing, CD-ROM libraries, tapes, and more. To use this technology effectively and avoid being distracted by the usual malfunctions and dense manuals, teachers must spend a lot of time in the classroom themselves.

It doesn't have to be this way, however. As technologies mature, they tend to become easier to use. Consider the elevator and radio, for example. Once so finicky it needed operators to take riders from floor to floor, today's elevator functions flawlessly with little intervention on the part of users. Likewise, when the radio was first developed, it was the domain of specialists. Today's radio is a model of usability, requiring no special training for the listener who wants to find the nation's top ten hits.

It is true that not all technologies are so uncomplicated. For example, the person who operates a nuclear reactor must have some expertise and special training. But such systems are rare, overwhelmed by an array of far simpler innovations. If a technology is to become widespread, it is crucial that it be easy to use-so easy that it need not be packaged with an operating manual. Technology that teachers employ in the classroom must be of exactly that variety: widespread and easy-to-operate. A learning simulation, a conferencing tool, and a student record keeper should be as trouble-free to use as a television, a telephone, and a notebook.

I believe that we currently are in a transition phase; we are moving away from complicated technologies toward simpler innovations. For the most part, however, today's technology remains clumsy. We must question whether the time and money we are investing in that technology, in teaching teachers to use it, is well spent. Certainly training is necessary to get us to a higher level of technological advancement, but we must not take our eyes off the long-term goal: good technology.

What distinguishes a good technology from a bad technology? The following nine characteristics define the former. Think of them as a checklist; a technology that has more of these features is, in general, better than a technology that has fewer of them.

Good Technology: The List

1 Good technology is always available. This distinction is what makes buses, in spite of all of their advantages, bad technology. People cannot count on catching the bus at absolutely any time of day; thus most people prefer cars. In the educational field, the technological equivalent of the bus is the equipment trolley. It is necessary because only one projector (or workstation or overhead projector) is available to serve five classrooms. Imagine what life would be like if we had to schedule our use of the elevator. Or to make reservations to use the telephone. Good technology does not require scheduling, relocation, or set-up.

The availability requirement raises cost considerations. Equipment that costs less is more likely to be available. But cost is not the sole or even primary determinant. If a technology meets the other criteria described below, it will be made widely available despite the cost. Think of ATMs, electrical lights, and highways.

2 Good technology is always on (or can be turned on with a one-stroke command or, better yet, starts automatically when the need for it arises). One thing that makes the telephone useful is that we do not need to boot up the operating system before we make a call. Likewise, electrical lights are a significant improvement over systems that required individual ignition with a match or candle, and streetlights are practical because they come on when it gets dark outside. A weakness of motor vehicles is that they are not always on, a fact that causes endless frustration for users needing transportation on cold winter days.

Much of today's educational technology requires long

We currently are in a transition phase; we are moving away from complicated technologies toward simpler innovations. For the most part, however, today's technology remains clumsy.

and sometimes cumbersome initialization procedures. After wheeling in a projector from another room, for example, three teachers and a technician may spend time plugging it in, turning it on, spooling the film, and positioning the screen.

Admittedly, the "always on" requirement raises significant energy consumption considerations. A portable device that consumes a lot of energy, for example, cannot always be on because it must carry its own power supply. Energy itself-in inefficient forms like gas and oil-is too expensive to be consumed merely for convenience. Devices with low energy consumption, however, can always be on. Think of watches, telephones, and elevators.

3 Good technology is always connected. Good technology can send information when and where it is needed without human intervention. Fire alarms, especially institutional ones, are useful in this way. Indeed, if the detectors were not connected to warning systems, the alarms would be useless. Again, telephones are useful because no procedure is required to connect to the telephone system.

As recently as last month, I spent fifteen minutes in a room with a dozen or so highly paid professionals waiting for a video conferencing system to be connected to a remote location. I have spent much time listening to my modem dial up a local provider (and luxuriate today in the convenience of an always-on Digital Subscriber Line).

4 Good technology is standardized. One television functions much like another television (televisions became less useful with the introduction of brand specific remotes). One telephone connects to any other telephone in the world. One brand of gasoline powers your car as well as any other-but cars that require different grades of fuel, such as diesel, are bad technology because of their reliance on non-standard fuel.

Standardization promotes interoperability. Interoperability means that you have choices, that you are not locked into one supplier or vendor. It means that you can adapt easily to improved versions of the same technology: you can upgrade to a bigger television or engine-cleaning gasoline without replacing your electrical wiring or car engine. A video that is designed to be played only on a specific computer platform and email that may be read only via a specific Internet Service Provider are examples of bad technology. Video should be viewable on all platforms and email should be accessible through any Internet service provider.

5 Good technology is simple. Simplicity is a slippery concept, but the best technologies can be learned by looking at the input device, not by studying a manual.

Here's how I distinguish between good computer programs and bad computer programs: I try to install and run the program without the use of any manual. Installation is much easier today, thanks to a good computer program called "Setup." Running the program is a different matter. When I have to stop and think (and read very small print) about how to get rid of a paperclip icon so that I can type a letter, I know I am dealing with* bad technology. Good technology, by contrast, is intuitive. To use an elevator, I press the floor number. Simple. To make a phone call, I dial the number. Easy.

Simplicity goes hand-in-hand with range of function. Features that you never use get in the way, and they make the product complicated and cumbersome. Look for technology that does exactly what you want: no more, no less.

6 Good technology does not require parts. Cars are bad technology: they require a never-ending array of parts, from gasoline to oil to air filters. It is easy to overlook parts because they seem integrated into the whole; consumables, like oil or ink cartridges, don't satisfy our intuitive definition of parts. But insofar as they must be replaced and are essential to the operation of technology, they count as parts, at least for the purposes of this article.

The bottom line is this: Do you have to purchase something on a regular basis in order to use your technology? Do you have to replace something that becomes worn out or depleted or that can be lost or stolen? The fewer times you have to purchase or replace, the better your

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9 Rules For Good Technology

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technology; the best technology requires no ongoing purchases or replacements at all.

Sometimes it is not possible to do without parts, but this is a sign of a transitional technology. Perhaps even good technologies, such as portable stereos that require CD-ROMs, need parts. But a portable stereo that does not need CD-ROMs because it can download MP3 files from the Internet instead would be better. If parts are absolutely necessary, they should be widely available, standardized, and simple to install. DVD players, for example, will not qualify as good technologies until DVDs become as widely available as videotapes.

7 Good technology is personalized Some of the simplest technologies succeed because they are personalized. One of the things that makes a telephone useful is that you have your own telephone number. In a similar manner, e-mail is useful because you have your own e-mail address. ATM cards would not be at all useful unless they opened your bank account and only your bank account. Credit cards, smart cards, pagers, cell phones, and eyeglasses are more examples of personalized technologies.

Bad technology forces you to fit its requirements. I purchased my copy of Microsoft Word in Canada, but the default dictionary was for American English. I could install a British dictionary, but Canadian English is distinct from both British and American English. Like many users, I am forced to add each distinctly Canadian word to a custom dictionary. This is bad technology. Why can't I simply tell Word that I am Canadian (or an architect, or a member of some other specialized group) and have it retrieve the appropriate spellings for me?

8 Good technology is modular. By "modular" I mean composed of distinct entities, each of which works independently of the others and may be arranged or rearranged into a desired configuration with a minimum of fuss and effort. To a degree, this requirement is a combination of the requirements that good technology be standardized and personalized, but modularity takes technology a step beyond either of those features.

Bricks and wood are good technology because they interconnect neatly and can be assembled into custom configurations. Legos are even better because they do not require parts like nails or cement.

The stereo systems we purchased in the 1970s are good examples of modular technology. Using the standardized RCA jack, we could assemble systems with or without preamps, tuners, equalizers, or even turntables. Today's Universal Serial Bus (USB) represents good technology because it allows computer systems to be assembled like the stereos of old. Books-and paper in general-are good because they are modular; a person may assemble a book, such as a binder, out of individual sheets of paper and a library out of a collection of books.

9 Good technology does what you want it to do. And it doesn't do something else. "Doing what you want it to do," means the same thing as "idiot proof." Good technology minimizes the potential for operator error and thus the possibility of unexpected consequences. Good technology is also robust-less prone to breakdowns and malfunctions-and reliable. Software that crashes instead of running is obviously bad technology. Telephone systems that connect you to India instead of Indiana are not useful.

"Doing what you want it to do" is a highly personal thing. If you want your daughter's clothes to protect her from the cold, then her selection of a light chiffon top and an ultra-mini skirt represents bad technology. But if she wants clothes to accentuate her physical features, then the same clothes represent good technology.

Conclusion

It is important to remember that no technology is perfect. No technology will satisfy all nine rules. However, some technologies will satisfy more rules than others, and some technologies will even break a rule or two and still be very good technologies (if only because no better alternative is available). That said, purchasers should insist on-and vendors should be pressed for-good technology as defined above. We spend too much time and money on new technology to be satisfied with anything less.

Stephen Downes is an Information Architect employed by the Faculty of Extension at the University of Alberta in Edmonton, Alberta, Canada. He has worked as a Distance Education and New Instructional Media Design Specialist, and has taught philosophy by distance for Athabasca University.

http://www.newstrolls.com

Why Aren't You Video Conferencing?

Bonnie Easley
Owner, LiveWire

Do you know where your video conference systems are today? Do you know who is using them, or if they are being used at all?

Three years ago, every community college (and district office) in the state received a Venue2000 PictureTel video conferencing system funded through the Technology and Telecommunications Infrastructure Program (TTIP). As a part of Technology Plan I, all of the colleges would be brought onto a T-1 backbone with the CSU system for high-speed video and data transfer in a new joint venture known as 4CNet. The goal was to enable all new Tidal Wave II students to be able to access education any time, any place.

It could not have been foreseen, however, that a technology revolution would come in the form of the Internet, and that the hype of synchronous teaching using video links would turn out to be just that, hype.

The process of supplying the colleges with video conferencing capability involves not only an initial output of over three million dollars from the Chancellor's Office, but also a continuing cost of at least three million dollars a year in subscription fees and other expenses.

In each of the succeeding years of the TTIP, colleges have been asked to submit Certification Plans. What does your Video Plan project? Does it include administrative uses, staff time, and training? At some point, the State Legislature and Governor, who have also been willing to increase the dollar amount allocated to Technology each year, will be expecting some accountability. Yet, something is still amiss.

Today, the colleges have not only a need for training to make use of video conferencing for instructional and administrative purposes, but more importantly, a need for a coordinated plan. As with any strategic, or coordinated, plan, there needs to be a person who has a primary responsibility to identify the need, assess the situation, establish a mission and develop goals and objectives to reach the desired outcome(s).

Each college and district must look at their total instructional program and ask a few important questions:

- Are you meeting the needs of all the students in your service area?
- Are there students who cannot come to campus?
- Could small classes on one campus be video conferenced to another campus to make one full class?
- Are there special courses offered at other colleges that would be of interest to your students that you do not offer?
- Are there instructional opportunities in business and industry that could be video conferenced to your campus?
- Could video conferencing help cut the cost of long-distance administrative meetings?

Once your college ascertains that there are students who might access these classes, what are the next steps? Can your instructional program handle it? Do you have vibrant and eager instructors who would like to teach in the tele-video modality? Are they trained? Do you have a facilitator at the remote site? How are students enrolled, oriented, given normal student services; how do they get their books? Who handles tests and grading?

When Tech Plan I was launched some years ago, it was assumed that the colleges and districts would sort out some of these questions and quickly integrate video conferencing into instruction and administrative arenas. It hasn't quite worked out that way. A few of the colleges have sorted it out and have been experimenting with international programs, or coordinated with middle schools and high schools, or brought in programming from museums, aquariums and other special programs, etc. By and large, it has been one or two individuals on those campuses with a special connection that makes it happen.

As we approach Technology Plan II, it is clear that dominant distant learning modalities will include the Internet and television. Take the opportunity to map a direction for your campus and make use of your video conferencing equipment and serve your students and your college in new and innovative ways.

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Bonnie Easley recently retired as Distance Education Coordinator for Los Angeles Harbor College. She served as a Member of the California Community College Chancellor's Office Technical Advisory Committee on Video conferencing.

CCCSAT Broadcasting

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lic access cable channels was the first wave of bringing college courses into the home. With public access cable, community colleges could serve their local viewing areas. CCCSAT is investigating bringing video-based education into the home through public interest programming. Students access public interest channels through a direct broadcasting system (DBS) by having a small satellite dish at home and subscribing to a DBS provider such as EchoStar or DishTV. DBS subscription costs about the same as cable subscription, provides the consumer with many more channels, and is already used by millions of people.

A CCCSAT educational channel could be one of the DBS public interest channels. Monica Pilkey, a consultant with Educating Everyone, says, "I'm a believer that there's appropriate technologies for everything. I see DBS as a delivery mechanism that provides you with an opportunity to deliver high bandwidth, full motion digital video to the home."

In 1992, Congress passed the Cable Television Consumer Protection and Competition Act, which included a provision requiring direct broadcasting systems to devote a proportion of their programming to public interest programming. In 1998, the Federal Communication Commission adopted rules requiring DBS providers to set aside four percent of their channel capacity for this purpose.

Public interest programming includes both informational and educational programming. Because the cost of a public interest programming channel is only between 5 and 6 percent of the cost of a commercial channel on the same satellite, religious and political groups have been quick to apply for the bandwidth. Pilkey says, "My concern is that education will lose an opportunity to take advantage of this resource because they're not prepared."

CCCSAT is one of the exceptions, and is expecting the possibility of partnering with EchoStar to bring education across the nation. T

Online Advising

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into Foreign Students (6 percent), Policies and Procedures (5 percent) and Miscellaneous (4 percent).

What's the future for Online Advising at City College of San Francisco? One goal is to get more counselors involved. Technologically, we want to integrate it with the College Web site and automate responses to some of the standard questions.

> *"As community colleges create ways of providing quicker, better and more convenient access to their educational services, student support services such as enrollment, advising and counseling find themselves facing the same challenges."*

Rio Hondo College

Rio Hondo College (RHC) has approximately 1800 students enrolled in its Virtual College and is a Regional Center for the California Virtual Campus. The recognition of online support services as an integral part of a comprehensive distance learning program by RHC administration and Virtual College staff has facilitated the development of online counseling and library services with more service areas to follow in the future.

An online counseling service as defined by RHC counselors involves the process by which academic and career information and resources are disseminated to students online. Although much of what counselors do can be done online, RHC online counselors have recognized that there are limits in terms of the depth to which online counseling can take place. They have found themselves using a combination of online and telephone conferencing modes to provide a more comprehensive "counseling session" experience for students at remote sites. Online counseling at RHC supports not just Virtual College students but on-campus students as well.

Although all counselors at RHC can perform online counseling as part of their load, currently, five counselors are assigned on an hourly basis to the Virtual College as online counselors. The role of the online counselors includes both responding to inquiries from Virtual College students and to supporting Virtual College faculty retention efforts. Students access online counseling services at RHC through the college Web site. Once a student clicks into the Online Counseling link, he/she is asked to complete a form which is used to screen student inquiries. The forms are directed to one counselor who screens and distributes the forms to one of the online counselors. This process helps to keep the workload of each counselor balanced and to alleviate the problem of duplicate inquiries going to several counselors. Turnaround time for responding to inquiries is between 24 and 48 hours. RHC counselors respond to hundreds of student inquiries each semester and find that, on average, they engage in 3 exchanges per inquiry.

Among the many lessons we have learned from our experiences with online counseling are that there is a need for this type of service and that students do find the service useful and convenient. We have also found that to compose a thoughtful, accurate and comprehensive response to a student inquiry requires more work and research than a face-to-face session. Most importantly, we have found that being online counselors has increased our accessibility to students and effectiveness as counselors. T

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TIPS News focuses on projects funded by the California Community Colleges Chancellor's Office involving technology in education, as well as other issues concerning distance education in California, including video conferencing and online learning.

If you have an article suitable for publication in ***TIPS News***, or if you are interested in writing material, contact:

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off the wire

Online Teaching Standards

(continued from page 2)

The group created performance profiles that show how colleges can pace a prospective teacher's development of skills in using technology through the different stages of teacher preparation. Colleges also must provide adequate conditions and resources in order for students in teacher-preparation programs to meet the standards, the group said.

"We emphasized the shared responsibility of colleges of arts and science, teacher-education programs, and K-12 schools in preparing our standards," said Lajeane G. Thomas, an education professor at Louisiana Tech University and the director of the National Educational Technology Standards Project. "Each has an important role in making sure our teachers are prepared to use technology."

The standards were developed during the past year by groups that included college faculty members, schoolteachers, district and state officials, and high-tech company representatives. The project's coordinators also sought advice from curricular groups such as the National Science Teachers Association.

Arthur E. Wise, president of the National Council for Accreditation of Teacher Education, said that the project influenced his group's inclusion of technology in its new requirements for accreditation. Those requirements, approved by the council's board last month, will apply to all teacher-training programs seeking initial or renewed accreditation beginning in the fall of 2001.

A print version of the technology group's recommendations includes examples of how teacher-preparation programs can incorporate its benchmarks into their curricula. Copies of the printed report have been mailed this week to all teacher-training programs at colleges across the nation, Ms. Thomas said. Additional copies may be obtained by calling the society at 800-336-5191.

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