

Professional Development Series #101



**APPALACHIAN TECHNOLOGY
IN EDUCATION CONSORTIUM**

***TECHNOLOGY INTEGRATION:
ONLINE PROFESSIONAL
DEVELOPMENT
OPPORTUNITIES FOR
EDUCATORS***

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Technology Integration: Online Professional Development Opportunities for Educators

Introduction

Ask most people what the Internet is and you're likely to hear that it is a vast and disorganized storehouse of information, a place to gather knowledge and collect data. As educators, many of us are using this vast, disorganized web of resources to enrich our lesson plans, find answers to questions, and collect new ideas. The Internet's search engines direct us to even more pages of ideas, while known addresses lead us to specific content. Certainly, there is nothing wrong with this perusal approach to the Internet. A survey of K-12 teachers in the fall of 1999 found that 39 percent of public school teachers with at-school access to the Internet are using computers or the Internet "a lot" to create instructional materials (*Stats in Brief*, 2000). But, increasingly, the Internet is providing opportunities for us to obtain new knowledge in a more focused manner.

The Internet is becoming a place where we can enroll and participate in specific classes about relevant topics. Teachers can search for, find, and participate in online learning opportunities that are geared to meet their needs. For many educators, such learning is an ideal source for professional development, but because it is so new, many of us are not sure what types of opportunities are available or where within the vast web storehouse we can begin to find the resources best suited to our needs.

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Purpose

Given this reality, the purpose of this article is to provide educators with information about online professional development. Specifically, we want to offer some direction about the concept of using online professional development to learn technology-related skills and integration techniques. In conjunction with this idea, we will also direct you to some online professional development sites. With this focus in mind, let's start by examining the value of using the Internet to learn technology-related topics.

Rationale

The overall goal of most technology-related professional development is to provide interested educators with the skills and knowledge that they need to enhance their use of technology within their classrooms. Although computers are increasingly available in classrooms, "almost two-thirds of all teachers feel that they are not at all prepared or only

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somewhat prepared to use technology in their teaching" (*Power of the Internet*, 2000, p. 39). Furthermore, the web-based Education Commission reports "almost two-thirds of teachers (65

percent) had never used a computer before being introduced to one in the classroom" (p. 39). *Market Data Retrieval* reports: "the majority of American teachers receive fewer than five hours of technology-related professional development annually" (McKenzie, 2001). Considering these realities, it is no wonder that there is so much talk about the need for teachers to gain technology-related skills.

Over the past few years, technology standards have been developed at the national, state, and local school district levels. There are National Educational Technology Standards (NETS) for teachers and students, as well as newly developed technology standards for administrators. Some districts have put into place

specific standards for teachers' technology skills. Teachers in a district may use a tool such as the Profiler (<http://profiler.hpptec.org>) to assess their technology strengths and weaknesses. In some cases, the technology standards have been specified at the state level. According to the Milken Foundation's 1998 survey, 22 states have or are developing technology standards for initial certification, and 6 states have or are developing technology professional development requirements for certification renewal (*Learning Technology Policy Counts*, 2000). For example, Virginia specifies that instructional personnel shall:

- Demonstrate effective use of a computer system and utilize computer software.
- Be able to apply knowledge of terms associated with educational computing and technology.
- Be able to apply computer productivity tools for professional use.
- Be able to use electronic technologies to access and exchange information.
- Be able to identify, locate, evaluate, and use appropriate instructional hardware and software to support Virginia's Standards of Learning and other instructional objectives.
- Be able to use educational technologies for data collection, information management, problem solving, decision making, communication, and presentation within the curriculum.
- Be able to plan and implement lessons and strategies that integrate technology to meet the diverse needs of learners in a variety of educational settings.
- Demonstrate knowledge of ethical and legal issues relating to the use of technology.

(From <http://www.pen.k12.va.us/go/VDOE/Compliance/TeacherED/tech.html>)

Benefits

Online professional development can be extremely beneficial for educators, given the freedom it provides. The self-paced nature of online learning is often the perfect match for the busy schedules of classroom teachers. By simply going online, teachers can connect to web-based communities and courses to provide themselves with necessary professional development. Similarly,

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educators can enroll in courses that are specifically relevant to their needs because courses are no longer limited to local offerings.

Online professional development has been defined in many ways, largely because it includes a wide variety of technologies. In years past, distance learning included correspondence courses and videotapes, but now newer technologies have enabled distance education to occur right on the desktop of personal computers. Today, online professional development is commonly defined as “instruction delivered via the web” (Killion, 2000). Although this definition is sometimes expanded to also include intranet courses and even CD-based lessons, the underlying premise remains the same. Interested parties are able to access information and learning opportunities through technology.

Online professional development can be classified as either synchronous or asynchronous, depending on the type of communication that occurs through the technology in the course. Courses that are synchronous provide students with opportunities for “live” or “real-time” communication. Such learning usually occurs through the technology of chatrooms. In contrast, asynchronous communication does not allow for “live” collaboration between teachers and/or students. Rather, asynchronous learning environments use technologies such as bulletin boards and e-mail to provide communication. With such tools, students can, for example, communicate with each other by leaving messages on a bulletin board, but they cannot actually share or exchange thoughts in real time.

Many online courses are self-paced, which means that learners guide their own learning and progress through courses at their own speed. Online learning lends itself well to self-paced courses.

Critics may argue that online learning is not the best way for teachers to learn technology-related skills. After all, why learn about unfamiliar content in an unfamiliar fashion? Perhaps the best argument is that often the preferred way to learn something is to be actively engaged with it. By learning online, teachers “obtain a collateral benefit: they learn important technological skills” (*Power of the Internet*, 2000, p. 44). In this fashion, teachers are learning about technology with technology.

When teachers use school computers for online learning, they become familiar with the technology that is available in their own environment. How many times have teachers traveled to a technology-related professional development seminar only to return to an environment that does not have similar technology available for their use? Given such a consideration, online professional development inherently has a great benefit. Online courses not only offer onsite practice. They can also offer extended practice, which may prolong the amount of education teachers are getting (E-training offers options, 2002, p. 3).

A recent report from the Software and Information Industry Association (SIIA) cites online “education anytime, education anywhere” as one of the six trends shaping the digital economy today (*Trends Report*, 2000). In addition to the elements of online learning we have already mentioned—access to content, access from a distance, and individualized learning—the SIIA report cites a fourth element that is tremendously useful to educators: improved communications “facilitating efficient and effective contact and enabling teacher peer networks.”

From an administrative standpoint, online courses offer several benefits. First, many online courses are free and only require their students to complete a simple registration process. But even further, online courses can eliminate the need for travel, thereby saving time and money. Because travel to a university or professional development center is no longer a requirement with online courses, web-based professional development is a win-win situation for the educational community. This is especially true in

light of a recent finding from the National Center for Educational Statistics which reported that “82 percent of teachers cited lack of release time to learn, practice, or plan ways to use computers or the Internet” as the greatest barrier to their use of computers and the Internet in the classroom (*Power of the Internet*, 2000, p. 41). Online learning still may require release time, but probably not as much time as traditional requirements.

Considerations

Despite all the advantages of online professional development, educators should evaluate their own situation and learning styles before fully embracing e-learning. Although online professional development is beneficial in many regards, there are a few things to keep in mind before enrolling in such courses, especially if large amounts of money or time are a requirement for enrollment.

First, interested educators should ask themselves if they have uninterrupted time at the computer where they will be using the technology. As with all professional development, focused time is a requirement. Similarly, it is vital for potential online students to consider the ways in which they learn best. Some online professional development sites are more text-heavy than others. Also, some online training sites favor listening skills, whereas others highlight interaction and communication. Regardless of the methods used, it is vital for potential online students to consider their learning styles before embracing the world of online learning.

But before we begin to examine a variety of online professional development sites, it is also relevant for us to at least briefly mention what some practicing educators and educational organizations are emphasizing regarding the use of online professional development. Joellen Killion, the director of special projects for the Ohio-based National Staff Development Council, identifies the ideal professional development situation as including a combination of both online and face-to-face interactions (E-training offers options, 2002, p. 8). Leaders at the Center for Online Professional Education (COPE) echo this idea. They emphasize that online professional development is most effective when carefully inte-

grated with existing local programs and in combination with face-to-face opportunities (Treacy, Kleiman, and Peterson, in press).

In this report, we will look at several professional development sites. Table 1 lists some of these sites and notes the instructional techniques stressed within each site. These techniques are:

- *Animated*—provides animation as a source of or supplement to instruction
- *Audio-enhanced*—provides music and/or narration
- *Video-enhanced*—provides video-based instruction
- *Interactive*—provides opportunities for users to point, click, and be actively engaged with the content beyond the typical functions of using a browser
- *Project-based learning*—gives students opportunities to learn by creating a sample project or dealing with a scenario
- *Synchronous real-time chat*—includes communication that is “live” and provides immediate real-time feedback
- *Asynchronous discussions*—includes communication that occurs with other people, but not “real time” collaboration
- *Instructor led*—includes lessons that occur with the presence of an instructor.

“At Your Fingertip” Resources

Without a doubt, many of the best technology integration resources are available only through the Internet, where teachers can build online communities of learners. The Internet also contains good nuts-and-bolts resources about how to use computers and software. However, often the best and easiest-to-find

Resource	URL	Animated	Audio Enhanced	Video Enhanced	Inter-active	Project-Based Learning	Sync Real-Time Chat	Async Discussions	Instr. Led
Internet Explorer Tour	http://www.microsoft.com/Windows/ie./tour/								
Acciden	http://www.actden.com/skills2k/	X	X		X				
BrainPop	http://www.brainpop.com/tech/computeranddigital/	X	X		X				
WebMonkey for Kids	http://hotwired.lycos.com/webmonkey/kids/					X			
Getting Started.net	http://www.gettingsstarted.net/				X	X			
Machstruct	http://www.machstruct.com					X			
Chalksoft Academy	http://www.chalksoft.com/School/school.html							X	
Barnes & Noble University	http://www.bnuniversity.com							X	X
ACT360 Media	http://www.microsoft.com/education/tutorial/online.asp	X	X		X				
Training Cafe	http://www.trainingcafe.com	X			X				
Concept to Classroom	http://www.vnet.org/wnetschool/concept2class/index.html		X	X				X	
Tapped In	http://www.tappedin.sri.com				X		X	X	X
T.H.E. Institute	http://www.thejournal.com/institute/professionaldev.cfm					X		X	X
WebEd	http://www.webed.com				X				
Online Learning	http://www.onlinelearning.net	X	X	X	X		X	X	X
Connected University	http://cu.classroom.com/login.asp					X		X	X

Table 1: Examples of Online Professional Development Sites with Identified Characteristics

nuts-and-bolts resources are built into the software itself. Before we look at online resources, let's consider a few examples of often-overlooked software resources.

Too often ignored is the ? icon in the upper right of dialog boxes in Windows-based software. By clicking on the ? icon, the user turns the cursor into a question mark. The user is then able to click on the unfamiliar term, to see its definition.

The Help menu within the software often contains more than just the Help index. Often it contains a link to tutorials. For instance, the Mac OS 9 operating system includes three excellent interactive tutorials: "Desktop Basics," "Internet Basics," and "Macintosh Basics."

Similarly, Internet Explorer 5's Help menu includes a "Tour" web link (<http://www.microsoft.com/windows/ie/tour/>) that guides users through an introduction to the Internet and the Internet Explorer browser.

In general, the software or hardware company's web site is the best as well as the most obvious place to check first for online tutorial materials related to specific software or hardware. Often these web sites contain information targeted toward educators. For example, the AppleWorks web site contains educator resources such as a downloadable AppleWorks map of the Oregon Trail (<http://www.apple.com/education/k12/products/appleworks/>). Apple's web site also contains registration information for many online courses. Individual teachers can take these courses for a cost of \$49 (<http://ali.apple.com/nshelp/welcome.shtml>). The Microsoft Classroom Teacher Network similarly offers many technology integration ideas and downloads (<http://www.microsoft.com/education/mctn/>). Intel's Teaching with Technology site² in addition to offering a web version of its "Journey Inside: The Computer" classroom kit² offers a primer in creating a school web site (<http://www.intel.com/education/teachtech/index.htm>).

The web sites of hardware and software companies are by no means the only places on the Internet where quality online professional development can be found. In the sections that follow, we highlight several noteworthy sites. As all web surfers can attest, the information contained on the web is not always of high

quality. Often web sites contain obsolete information. Some of the sites highlighted below contain information about older versions of software. However, they have been included because they are thorough and may prove useful to educators.

Learning Computer Basics

One of the easiest ways to explore the world of online technology professional development sites is to take a look at sites that may appeal to your K—12 students. Act360° Media, in conjunction with Microsoft, offers a free online tutorial “Museum of Modern Technology with Ada Omega” (<http://www.actden.com/skills2k/>). The tutorial contains four sections: “Operating Systems,” “E-mail,” “The World Wide Web,” and “Networks.” Enhanced by Flash technology, the tutorial contains animations and simple review quizzes.

Even more interactive are the free Flash-based BrainPop tutorials which have grown popular among children both in the classroom and at home. BrainPop includes several computer-related tutorials and accompanying activities (<http://www.brainpop.com/tech/computeranddigital/>). For example, the Computer page offers a fact-filled movie, a review quiz, a printable activity page, a simple computer monitor experiment, and instructions about how to clean a computer.

Predictably, the Internet is home to many free sites that offer information about constructing web pages. Most of these sites are text-heavy and a bit overwhelming for the beginner. Why not begin with a tutorial site intended for children? Webmonkey for Kids is an attractive and well-written site that provides a total of 13 lessons ranging from an explanation of the Internet to a tutorial on creating tables using HTML (<http://hotwired.lycos.com/webmonkey/kids/>). The site includes a planning guide geared toward teachers and parents.

Quite logically, the Internet is also a great place to find information about how to best search the Internet. One K-12 oriented site is KidsClick! Worlds of Web Searching (<http://www.worldsofsearching.org/>). Though not as flashy as the other tutorials for children, this one has been carefully researched and organ-

ized by librarians. It even contains a section on what cannot be found on the Internet.

There are many other excellent free tutorial sites targeted to an adult audience.

GettingStarted.net (<http://www.gettingstarted.net/>) offers introductory lessons on web page development. The site covers similar information to that covered in Webmonkey for Kids. But the GettingStarted.net offers a nifty "Try It" feature that allows you to type HTML code and then see how that code looks when displayed in Internet Explorer or other web browsers.

METIS (Mastering Essential Techniques for the Information Superhighway) was created in 1998 for students taking an Introduction to University Life course at California State University, Chico. Although some of the information in the many METIS tutorials is specific to that university, most of the information is useful to any PC user. Tutorials cover a wide range of topics that are arranged into four categories: computer fundamentals (Windows-based), applications (Microsoft Office), communications (Netscape Communicator), and the Internet.

For the Macintosh user, a good general resource for short tutorials is MacInstruct (<http://www.macinstruct.com>). MacInstruct is home to more than 100 Mac tutorials written by regular-folk Mac users. The philosophy of the site is that users learn by teaching and that newcomers write the best tutorials.

ChalkSoft Academy, though now somewhat dated, has the advantage of being designed "by teachers, for teachers" (<http://www.chalksoft.com/School/school.html>). According to the web site, the ChalkSoft group of New Zealand teachers "were, to put it bluntly, tired of the garbage which paraded the Internet in the guise of 'Educational Software.' They were looking for real software to use productively in their classrooms on a daily basis." The site contains tutorials on Windows 9x, an older version of Microsoft Office, HTML, and an older version of the web site building software, NetObjects Fusion. The tutorials offer a nice balance of text and graphics.

Another free resource useful to both Mac and PC users is Barnes and Noble University (<http://www.bnuniversity.com>), of-

ferred by Barnes and Noble Bookstore. The web site offers free courses on a variety of ever-changing topics. Technology courses range from beginner topics such as building your first web page to more specialized ones such as XML. The Barnes and Noble University courses are text-based and emphasize active communication through an online discussion board. Although there is no fee associated with the courses, students are encouraged to purchase companion books.

Sometimes, you need a question answered quickly and directly, in plain English. A number of web sites, though not designed as professional development sites, do a good job of providing these answers. Among them is the ZDNet web site (<http://www.zdnet.com/zdhelp/>). Perhaps even easier to use is the SmartComputing web site (<http://www.smartcomputing.com>) which contains articles written in an easy-to-understand format. SmartComputing's learning series provides readers with answers to general computing questions, while the site's "teach me" lessons provide readers with assistance on installing software, upgrading computer components, and completing such tasks as adding video to a multimedia presentation.

CyberLearning Universe (CLU) is a non-profit organization that provides access to a catalog of more than 600 online courses on technology (<http://www.cyberlearning.org/>). To address the digital divide, CLU offers discounted prices to students, teachers, faculty, and staff of disadvantaged schools (35 percent or more on free/reduced lunch). Through its web site, it also offers several free sample tutorials. These Shockwave-based tutorials on Microsoft Office applications, while very basic, are well organized and well presented.

The HTML Guild offers reasonably priced HTML courses that rely heavily on textbooks and discussion board postings (<http://www.hwg.org/services/classes/>). Although certificates of completion are available for these courses, like the other courses mentioned in this section, these courses are not geared specifically toward educators. Before enrolling in a fee-based course or investing an extended period of time in a structured online course, you may want to first explore teacher-specific resources.

As Jamie McKenzie points out in his article "Head of the Class: How Teachers Learn Technology Best" (2001), educational

technology is not about PowerPointing, spreadsheeting, or word processing: “The focus of professional development should be on teaching and learning strategies that make a difference in daily practice—on activities that translate into stronger student performance.” In the following section, we discuss a number of sites that offer teacher-specific professional development resources.

Teacher-Specific Professional Development Sites

Some teacher-specific professional development sites are free and require no registration. For example, in conjunction with Microsoft, ACT360° Media offers lessons on integrating a variety of high-profile Microsoft software into the classroom—Microsoft Office, Front Page, Internet Explorer, and Outlook Express (<http://www.microsoft.com/education/tutorial/online.asp>). All the lessons are self-paced and interactive, providing educators with an enjoyable introduction to these software programs and how they can be used in the classroom.

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Training Café (<http://www.trainingcafe.com>) does require registration and installation of a free browser plug-in, but it offers free high-quality training on Internet technology (17 modules) and Macromedia’s web publishing tools (8 modules). The Macromedia/Winstar site is designed specifically for educators and supports the new International Society for Technology Education (ISTE) National Education Technology Standards for Teachers. Each of the 25 modules consists of interactive instruction, a brain-check quizzing feature, a resource section, and sample K-12 lesson plans. The typical module requires one hour to complete. Table 2 identifies the cost and credits for the sites mentioned.

Another excellent free web site for educators is National Semiconductor’s Global Connections Online. Course offerings tend to focus on Internet basics and how the Web can be used to enhance instruction. Although the courses tend to be text-heavy, the site offers its registrants some unique services. Specifically, a course progress page is provided so that you can easily keep track of the courses you have completed, partially completed, or still need to take. A discussion board and chatroom offer a degree

Resource	URL	Free	Fee-Based	Credit	Non-Credit
Internet Explorer Tour	http://www.microsoft.com/Windows/ie/tour/	X			X
Actden	http://www.actden.com/skills2k/	X			X
BrainPop	http://www.brainpop.com/tech/computeranddigital/	X			X
WebMonkey for Kids	http://hotwired.lycos.com/webmonkey/kids/	X			X
GettingStarted.net	http://www.gettingstarted.net/	X			X
MacInstruct	http://www.macinstruct.com	X			X
Chalksoft Academy	http://www.chalksoft.com/School/school.html	X			X
Barnes and Noble University	http://www.bnuniversity.com	X			X
ACT360 Media	http://www.microsoft.com/education/tutorial/online.asp	X			X
Training Cafe	http://www.trainingcafe.com	X			X
Concept to Classroom	http://www.wnet.org/wnetschool/concept2class/index.html	X		X	
Tapped In	http://www.tappedin.sri.com	X		X	
T.H.E. Institute	http://www.thejournal.com/institute/professionaldev.cfm		X	X	
WebEd	http://www.webed.com		X	X	
Online Learning	http://www.onlinelearning.net		X	X	
Connected University	http://cu.classroom.com/logon.asp		X	X	

Table 2: Examples of web sites with fees and credits

of interactivity not found in all free online professional development resources. Furthermore, Global Connections Online courses are also available in PDF format, which allows for clean printing. In this way, courses can be conveniently read offline in paper-based format. You can receive 1.5 academic credits for completing all Global Connections Online courses. However, to receive this credit, you must register through the University of California, Santa Cruz, and pay an \$82 registration fee.

Most of these free teacher-specific sites focus on widely used technologies. Yet more specialized free information is also available. For example, Digital Bridges (<http://www.netc.org/digitalbridges>) provides teachers with information about the instructional, communicative, and collaborative uses for videoconferencing. The site includes examples of how videoconferencing can be used for educational purposes, as well as resources and a teacher's guide to videoconferencing.

Also available are free resources that are discipline-specific. For example, PBS's TeacherSource offers examples of web-based activities for a variety of disciplines (<http://www.pbs.org/teachersource/teachtech.htm>). For example, the social studies materials on "The West" offer web-enhanced lesson plans that correspond to the ten parts of the television series.

Similarly, many of the web sites that are most popular in K-12 classrooms offer teacher guides that often provide detailed tutorials on technology integration. For example, Yahoooligans! offers several tutorials on topics such as teaching Internet literacy (<http://www.yahoooligans.com/tg/>). The Library of Congress' American Memory site offers the Learning Page for educator use (<http://memory.loc.gov/ammem/ndlpedu/>).

Though designed for New York teachers, the Concept to Classroom workshops are free to all teachers (<http://www.wnet.org/wnetschool/concept2class/index.html>). The 11 workshops cover a variety of "hot topics" in K-12 education ranging from multiple intelligences to afterschool programs. Two of the workshops specifically address technology integration—"Why the Net?" and "Webquests." However, the Concept to Classroom format means that all 11 workshops have a technology integration component. A collaborative project of wNetSchool and the Disney Learning Partnership, each workshop includes a well-written and well-illustrated explanation of concepts, a video-based demonstration of the concepts, exploration activities, and implementation suggestions and checklists. A discussion board allows educators to exchange ideas. With each workshop, there is a printable administrative letter that outlines the structure for the workshop and argues its value as continuing education credit.

One well-established free resource is Tapped In (www.tappedin.sri.com). Tapped In is a network of chatrooms that allows

teachers, librarians, teacher educators, students, and other interested individuals to collaborate with each other. In this environment, participants can plan and conduct projects, have topical discussions, find resources, meet new colleagues, and test new ideas. Experts lead scheduled chats on specific topics in their fields. For example, Bernie Dodge, co-inventor of the WebQuest, frequently hosts discussions on WebQuests. Members of the help-desk staff greet visitors to Tapped In and offer helpful suggestions and directions to the desired discussion. One nice feature of Tapped In is that after each session you receive, by e-mail, a transcript of your session. Many educators find these transcripts useful in requesting professional development credit.

Another well-regarded resource is WorldCom's Marcopolo web site (<http://marcopolo.worldcom.com>). Marcopolo is a consortium of organizations such as the Kennedy Center and National Geographic. With the help of the WorldCom Foundation, these organizations have developed standards-based, advertising-free web sites designed for the K-12 classroom. As part of its dissemination effort, Marcopolo offers free live training using the train-the-trainer model. Most states have now signed agreements with Marcopolo that allow this training to be customized to state content standards. The Marcopolo web site offers a form for requesting this training as well as links to trainer materials and a Flash-enhanced tour of Marcopolo, the resources it contains, and ways these resources can be used in the classroom (<http://marcopolo.worldcom.com/training/online.shtml>). Also available on the web site is a form to request a free hard copy of the Marcopolo resource guide. The Marcopolo web site offers a single point of entry for exploring these resources.

T.H.E. Institute currently offers five online courses—"Internet Tour for Educators," "Beginning Multimedia," "Web Design Made Easy," "Using the WWW to Teach Middle-School Mathematics," and "Integrating Technology with Classroom Teaching: Designing a Mini-Project" (<http://www.thejournal.com/institute/professionaldev.cfm>). Sixty-day courses range in price from \$79 to \$179 per course, per person.

WebEd, another early starter in the area of online professional development for educators, offers many online courses. WebEd's courses are self-guided and self-paced, and are intended to

provide educators with opportunities to gain recertification and graduate-level credits. Although WebEd's courses cover a variety of topics, the company is currently offering only one technology-related course: "Educator's Guide to the Internet" (<http://www.webed.com>). The cost of the course is \$100, and it carries ten professional development units.

One of the largest online programs offering continuing education credit for technology integration courses is OnlineLearning.net (<http://www.onlinelearning.net>). Its summer 2001 catalog lists 22 "Instructional Technology for Educator" courses ranging from software instruction to integrating technology into specific curricula. In fact, the company's CEO John Kobara reports that K-12 teachers make up nearly half of OnlineLearning.net's customers (*Online Professional Development*, 2000). The instructor-led, month-long courses offer text-based lectures, chats, discussion boards, and other assignments. Credit is offered through the University of California. Most courses cost \$500. National Education Association (NEA) members can receive a discount of \$75 or 15 percent (whichever is greater). Credit for courses varies although most courses carry 3 or 4 hours of academic credit.

TeacherLine, an online community currently being piloted by PBS through a Department of Education grant, will offer its own certificate programs in four areas—"Technology Skills and Knowledge," "Professional Practice," "Teaching and Learning," and "Curriculum and Assessment." The competencies for the program are based on the National Education Technology Standards (NETS) for teachers. Participants will be able to earn one of these certificates by completing 400 units (approximately 20 TeacherLine modules). Modules were developed by leaders in the field such as San Diego State University, Thirteen/wNet, the Learning to Teach with Technology Studio at Indiana University, and Tom Snyder Productions. Registration on the TeacherLine site is free. However, modules can only be accessed once you receive an access key by enrolling in the module through a licensed partner. The web site suggests that modules will also be applicable "toward gaining continuing education credits, professional development credits, or seat hours (depending on your district, state or local education agency regulations)."

Despite all the benefits of online learning, many educators are legitimately concerned about how they will receive certification

credit for their enrollment and participation in online courses. As with all professional development credit, a teacher's State Department of Education or local district decides whether a given course is acceptable. However, educators should obtain some comfort in knowing that continuing education units (CEUs) are increasingly being applied to online courses that are not offered for academic credit.

According to the Center for Professional Advancement, continuing education credits are "a uniform unit of measurement to record participation in non-credit academic, professional and vocational programs" (<http://www.cfpa.com/accreds/ceu.html>). Only organizations that abide by the criteria and guidelines of the International Association for Continuing Education and Training (IACET) are able to legitimately distribute CEUs. IACET's nationally recognized CEUs follow a rather simple formula. One CEU is equal to "ten contact hours of participation in an organized continuing education experience, under responsible, qualified direction and instruction" (<http://www.iacet.org/guidelines/section2/index.htm>).

Because online learning is so new, there is still some uncertainty about the role CEUs will play with distance education. However, IACET has already developed *Guidelines for Distance Education* to address growing concerns about the quality of distance learning courses. But until more definitive standards are devised, educators should check with their district or State Department of Education to determine the legitimacy of a course, and more importantly, to be more clearly aware of how that district or state views CEUs as a source for online professional development.

To streamline this credit-granting process, many states and districts are turning to subscription-based online professional development services such as Connected University (CU) (<http://cu.classroom.com/logon.asp>). Individual teachers may join Connected University for a cost of \$349 per year. However, more typically the state or district joins. Teachers then have unlimited access to the courses as well as the popular "Recipes for Success"—quick tutorials in how to perform specific classroom tasks such as making MadLibs with Hyperstudio. Connected University courses feature text-based lessons, written assignments, and class discussions through a discussion board. In a retrospective of the service's first year, CU Vice President Scott Noon credits its

success to its guiding development principle—"the application of Communities of Practice research" (*Maturing of Online Professional Development*, 2000).

States and districts have recently begun to develop their own professional development online resources. According to the Milken survey, 31 states have implemented a professional development project on educational technology that is an online learning environment at either the state level or at one or more regional area technology centers. One catalyst for this rapid growth in online professional develop-

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ment has been federal funding through the Technology Literacy Challenge Fund (TLCF) and the Technology Innovation Challenge Grants (TICG). Among the TICG products is the Maryland Electronic Learning Community (<http://209.48.188.166/schools/home.html>), which is highlighted in Kathleen Fulton and Margaret Riel's article "Professional Development through Learning Communities" (1999). One TLCF recipient, Holton School District in Kansas, has created a host of online video tutorials that meet the software and integration needs of the district's 99 educators (<http://www.holton.k12.ks.us/Training/>). The district has purchased the domain name <http://freetraining.org> and encourages teachers elsewhere to make use of their materials.

The links mentioned in this article are only a sampling of what your own searches of the Internet may reveal. The sites we highlight were gleaned from our own research and our own searches of the Internet. Although we explored these web sites from an educator's perspective, we did not fully enroll in all courses. Before enrolling in a fee-based course, you may wish to request from the company the names and contact information of satisfied customers. In addition, when evaluating the accuracy of any professional development site, you may want to use the general tips given below:

1. Check to see when the page was last modified:
 - In Netscape, select the View menu, Page Info
 - In Internet Explorer, select the File menu, Properties
-

2. Examine the web sites associated with the page you have found:
 - Remove the portion of the URL after the forward slash (for example, shorten <http://infocomp.csuchico.edu/metis/menu.htm> to examine the web sites <http://infocomp.csuchico.edu/metis/> and <http://infocomp.csuchico.edu>)
3. Use a search engine to find out what sites link to this page:
 - Go to <http://www.altavista.com> or <http://www.lycos.com> and search for linking sites by typing "link:" followed by the URL (for example, link: <http://infocomp.csuchico.edu/metis/menu.htm>)
4. If you are concerned that the page may contain out-of-date information, contact the person listed as the e-mail contact for more information.

All too soon, the links mentioned here and the links you will uncover may go stale. But tomorrow there will undoubtedly be new online resources. As the quality of Internet access continues to improve, the available online training will be increasingly video-based. Learning communities of teachers will also continue to grow. Assuredly, the future will hold even more online professional development options for educators.

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Additional Sources for Online Professional Development

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Connected University from Classroom Connect Inc. <http://cu.classroom.com>

PBS TeacherLine. <http://www.pbs.org/teacherline>

Tapped In. <http://www.tappedin.org>

TaskStream. <http://www.taskstream.com>

Teachscape. <http://www.teachscape.com>

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