CyberTools for Today's Schools: A Pilot Project[1]

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Abstract: *CyberTools for Today's Schools: Using the Internet for Professional Development and Productivity* was developed as a free online course for teachers. The overall goal is to equip participants new to online learning with the skills they need to succeed in future online classes and to offer ideas for integrating technology into the classroom. The course is facilitated by a real person who offers a supportive environment for participants. This paper discusses the need for such a course and the process for developing the course. It offers a brief description of the course and suggestions for adapting it to other contexts.

Background on Problem

The co-authors have been working on the development and delivery of a statewide online professional development project for Florida's teachers; one as co-PI and the other as a graduate assistant. Many of the teacher participants calling the help desk reported they had never taken an online class and didn't know how to perform some of the basic tasks expected. Too often, they quit in frustration. The *CyberTools* course was designed to offer a supportive environment to the novice online learner.

Literature Review

According to National Center for Education Statistics data, distance education "is becoming an increasingly visible feature of postsecondary education in this country" (Lewis, Snow, Farris, & Levin, 1999). School districts, universities, community colleges, states, government agencies, and companies are increasingly offering online professional development. Online learning offers a number of advantages including reduced travel time (Kosarzycki, Salas, DeRouin, & Fiore, 2003), access to courses unavailable locally, at-home study, flexible delivery, and the ability to accommodate families (Salas, Kosarzycki, Burke, Fiore, & Stone, 2001). Of online course participants, approximately one-half choose online learning for practical reasons including work and family situations (Kramarae, 2001). With the demands of teaching and families, educators are likely to value these same characteristics.

The Pew Internet and American Life Project studied teens and their Internet use. They found that most schools and teachers haven't yet responded to the drastically different ways the Internet-savvy teenagers of today learn. In fact, some of the teens who were interviewed spoke of barriers to Internet use at school including low-quality access, uninspiring assignments, and restrictive policies (Levin & Arafew, 2002).

Despite the recent improvements in hardware and Internet access in classrooms, teachers' inadequate technology skills remain a problem. With the majority of technology funds going to hardware and infrastructure purchases, sorely needed investment in professional development is left with little funding. In fact, staff development is expected to capture a mere 15 percent of technology budgets (Ansell & Park, 2003), though the recommended level of funding is 30 percent (Apple, 1995).

Sivin-Kachala and Bialo (2000) reviewed 311 research studies and concluded that the teacher's role and professional development were the most important factors in the use of educational technology, even more important than frequency of use. According to the U.S. Department of Education's 1999-2000 Schools and Staff Survey, only 42 percent of novice teachers feel prepared to use computers for instructional purposes (cited in Ansell & Park, 2003). Further, most teachers spend less than one day per year in technology-related professional development and do not get the follow-up and support they need to institute real changes in their teaching strategies. More training is needed, especially in how to integrate technology into teaching (Ansell & Park, 2003; Silverstein, Frechtling, & Miyaoka, 2000; Sivin-Kachala & Bialo, 2000). There are generally three barriers to effective integration of educational technology: inadequate access to modern computers, insufficient technology skills among teachers, and teaching philosophies that are incompatible with technology integration (Becker, 2000).

Project description

CyberTools For Today's Schools: Using the Internet for Professional Development and Productivity is a new five-week course designed for novice online learners. It has been designed to orient participants to the online experience and to equip them with Internet skills applicable to their dual roles of teacher and online learner. By providing ideas for using technology in the classroom, the authors and course designers hope to begin reshaping teaching philosophies to become more compatible with the use of technology in the classroom. The course is offered at no cost to teachers through the Instructional Technology Resource Center at the University of Central Florida, a SouthEast Initiatives Regional Technology in Education Consortium (SEIR*TEC) partner. Most teachers are eligible to receive 20 inservice points for completing the course.

In addition to a brief quiz and a simple performance-based assessment, each of the five lessons in the course has several sections: online learning tools, personal productivity tools, and Internet utility tools. Using a pre- and post-test design to measure learning outcomes, the course is facilitated by an experienced K-12 teacher and features a collection of links suitable for use in K-12 schools.

The course designers hope participants will be satisfied with their *CyberTools* experience and will be confident they have the requisite skills for further online learning. The designers also recognize that some participants will realize online learning is incompatible with their personal learning styles and will never take another online course. It is critical that these participants feel they learned something valuable they can use with their students and in their classrooms.

Course Development

To begin developing the course, the co-authors reflected on their own experiences with online instruction to generate a list of skills to include in the course. They modified this list as they consulted the literature (Houle, 1996; Committee on Information Technology Literacy, 1999; Ohlund, Yu, Jannasch-Pennell, & DiGangi, 2000; Smith, Caputi, & Rawstorne, 2000) and a variety of online learning readiness surveys (Bunz & Sypher, 2001; Miltiadou & Yu). Finally, the first author met with the technical staff of a statewide online professional development project to identify the specific technologies to include in the Internet utilities section of the course (i.e. media players and file compression software).

Next, the designers developed an outline for the course. They decided on the sequence to present the identified skills and mapped the content for each lesson. They also designed an assessment task, a grading rubric, and a brief quiz for each lesson.

The next step was to search the Internet to find resources for K-12 teachers to support the identified skills and concepts. Designers made special efforts to identify multimedia content for this audience. After that, several experienced online instructors reviewed the course and offered suggestions for modifications. Finally, the content was moved into WebCT and the course launched January 12, 2004.

Course Content

The course focuses on three major areas:

- To help participants develop skills and strategies necessary to succeed as online students.
- To help develop computer and Internet proficiency skills for personal productivity and to successfully integrate technology into instruction.
- To enable participants to view multimedia content on the Internet for their dual roles as online students and computer-using educators.

Online Learning Tools

The focus of this section is on the participant as an online learner. Lessons throughout this section of the course focus on developing skill using the online course tools including course discussion boards, quiz and survey tools, and course chat rooms. Participants also learn the protocols for using chats and discussion boards. They take an online readiness survey and read about the characteristics of successful online learners and the strategies they use to succeed. There is a special emphasis on effective help-seeking strategies for learning online and participants develop a personal plan for seeking help when it is needed.

Common terminology associated with online learning is introduced and defined in this section of the course. Participants complete a brief tutorial on netiquette and read a five-part article, *Journal of an Online Student*, in which the author describes his experiences completing an online Master's degree. Participants also read about how online degrees work at the award-winning *How Stuff Works* web site and learn to distinguish between accredited programs and diploma mills.

Resources for this section include online readiness surveys, a study skills survey, and a technical skills self-assessment. Several links to articles on study strategies and controlling the study environment are included. Online dictionaries and references are identified so participants know where to look to keep up with rapidly changing technology. There are also links to several websites with information about more online learning opportunities.

Productivity Tools

The productivity tools component helps participants sharpen important skills to become more proficient computer users. Many of the skills presented in this section are useful to the participants as they work in their classrooms. These skills include organizing bookmarks and putting them online, evaluating web resources, and using email more effectively. Participants refine their Internet search skills and learn about specialized search engines. Although most participants already know the basics of email, the course includes information on spotting hoaxes, avoiding viruses, using groups and mailing lists, and checking email from the web. Each lesson includes suggestions for using these same tools with students.

Resources for this section include tutorials to develop search skills, links to specialized search engines, ideas for using search engines to fight plagiarism, and a variety of search directories developed for educators. There are also tutorials to develop strategic bookmarking skills and a variety of web-based bookmark managers. Participants can visit the *How Stuff Works* web site to learn how email works. Participants are encouraged to read Alan November's classic article, *Teaching Zack to Think*.

Resources selected for K-12 students include a search advisor, the *SEIR*TEC Internet Quick Reference Card*, and the *QUICK Guide to Checking Information Quality. CyberTools* participants learn about student email accounts available at *Gaggle.net*, as well as visit several *Ask an Expert* sites.

In the last lesson, participants move from "consumers" of online learning to "producers" by using a variety of free resources for creating web pages, online activities, and free online assessment tools. Popular sites such as *TrackStar, Filamentality, Think.com, TeacherWeb, Rubistar, Survey Monkey,* and *PuzzleMaker* are all described and participants use a number of them to develop classroom activities. They may also use these resources to provide alternative assignments for students.

Utility Tools

Optional for most lessons, the utility tools section helps participants identify, download, and install many of the Internet utilities available to deliver audio and video content to their desktops. The first lesson requires participants to complete the utility tools section. It includes a listing of the minimum and recommended hardware and software requirements for the course. The course narrative guides participants through each line of the requirements listing and explains what the requirement means and how to determine if their computer meets it. For those who are interested, links to more technical explanations on the *How Stuff Works* web site are included. Information about

Adobe Reader is also included in the required first lesson. Participants learn to check their computer to see if *Adobe Reader* is installed. If not, they learn where to get it and how to download and install it. They also read an explanation of why PDF files are commonly used on the Internet.

Subsequent lessons are optional and introduce application players including *Flash Player, Shockwave Player, QuickTime, Windows Media Player* and *RealPlayer*. For each, participants learn where to download the utility, how to install it, and how it is used. CyberTools provides links to several educationally appropriate examples using these specific technologies.

Resources include a multimedia demonstration of force and motion, an interactive museum exhibit, links to famous speeches and songs, science demonstrations, *BrainPop* educational movies, training resources at *Atomic Learning*, professional resources at *Edutopia*, and a variety of other educational resources.

An optional lesson on file compression software explains when to use it, how to get it, and links to several different file compression utilities. For those wanting more technical explanations, links to the *How Stuff Work*s web site are available to compare and contrast *Flash* and *Shockwave* and to explain how file compression software works.

Table 1 outlines the division of course content among the five lessons in the course.

Lesson	Online tools	Productivity tools	Utility tools
1 Getting Started	Readiness surveys Discussion boards Quiz tool		Minimum/Recommended requirements Acrobat Reader
2 Jumping In	Learning the lingo	Search skills Bookmarking/Favorites Students: NoodleQuest Search Advisor and SEIR*TEC Internet Quick Reference Guide	*Flash Player *Shockwave Player
3 Quality Control	Help-seeking strategies	Evaluating websites for credibility & reliability Students: Age-appropriate tutorials	*File compression software
4 Making Connections	Online chats	Email and mailing lists Students: Ask an Expert sites, Gaggle student email, and Keypals	*QuickTime player
5 What Next?	Wrap –up	Free online activity building tools and class web sites Students: Puzzle creaters, free web page generators, photo albums, etc.	*Windows Media Player *RealPlayer

*denotes optional content

Table 1: Course content

Assessment

Each lesson in the *CyberTools* course includes a section called "In the Workshop." This section has a weekly assignment with a rubric, a quiz, and a checklist of tasks that should have been completed throughout the lesson. Weekly assignments give course participants a chance to apply the skills they've been learning in a personally meaningful way.

In the first assignment, students use the course discussion board to introduce themselves, meet their classmates, and interact with their peers. They share hobbies, favorite quotes, and information about where they work. Subsequent assignments include organizing bookmark files, posting plans for using the information learned in the class, and participating in an online chat. The final assignment requires participants to use one of the online activity tools to create a resource for their own classrooms.

Modifications for Other Contexts

Many of the ideas in the course can be used to develop projects at other institutions. The basic design of the course will accommodate a wide variety of fields. The core skills are the same for online classes across disciplines. Designed specifically for teachers, this course can be adapted to other audiences by changing the examples in the lessons, and some of the explanatory text. Assignments can easily be retooled to focus on skills in the new domain.

For example, a University music department might choose to make a brief course much like this one available to students taking an online music appreciation course. The section on multimedia players would prepare students, and their computers, to hear musical performances and examples. Assignments might be retooled to guide students toward creating an interactive music history timeline, complete with samples of musical instruments and musical styles.

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