Increasing Student Technology Skills through a Technology-Intensive Syllabus

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Abstract

It is critical for all students to become skilled users of a variety of software and hardware applications. It is particularly important for students training to become educators because their employers will expect them to be more knowledgeable and comfortable with instructional technologies than the students they teach.

To facilitate skill development, a syllabus was designed to incorporate all of the software applications used in the MS OfficeSuite package. This software was selected because it is used by the majority of students on their personal computers as well as in all of the university computer labs.

Students were expected to use each of the Office Suite components to fulfill their assignment requirements. In addition, students also developed skill in the use of SmartBoard, projection systems, and the manipulation and use of digital sound and picture files.

After completing this course, students met all of the ISTE [1] standards for technology competency.

Introduction

The Education of Persons with Hearing Loss Program at Indiana University of Pennsylvania (IUP) is one of only 68 programs in Deaf Education in the United States. It is critically important that students who graduate from this program are well-schooled in the specific knowledge base and pedagogical skills required for successfully teaching deaf and hard of hearing children, and are more than minimally accomplished in the used of basic educationally related hardware and software applications.

To facilitate the development of these skills, a technology-intensive syllabus was constructed for one course that is taken by all students in the deaf education major during their final semester prior to student teaching. The course is not only technology-intensive, but also designated a ‘Writing Intensive” course by the university. This means that the vast majority of work done in the class and the subsequent grade is based primarily on written products rather than examinations.

The Course

The course selected for this activity was the three-credit EDHL 351 – Teaching Reading to Persons with Hearing Loss. The course is 14 weeks in length and typically meets twice per week for ninety-minute class sessions. The class is held in a ‘technology’ classroom that contains a SmartBoard and a complete projection system connected to a computer that is online and fully networked with the various university systems. Since flexibility is a hallmark trait of a good teacher, the classroom also includes the old standby standard low-technology equipment often utilized by teachers in public school settings (VCR and monitor, overhead projector and screen).

Communicating with the Class

Communication in the class was maintained in a variety of ways. Several of the required writing tasks involved what became the most popular method of communicating in class, a WebCT instructional site. WebCT is an online course tool package utilized at IUP. Students are enrolled in the course by the instructor and then have full capabilities to converse either synchronously or asynchronously with the instructor or other students enrolled in the class.

The students participated in biweekly dialogue journals with the instructor and discussed a variety of ‘hot’ topics with each other through a threaded discussion on the bulletin board. Any questions related to the technology assignments were answered on the bulletin board, through email, or through a specified chatroom. The instructor even maintained regular office hours while out of town by using the chatroom feature of the WebCT site. The 20 students in the class ‘hit’ the WebCT site over 800 times in one semester alone. Since online communication was one of the course objectives, clearly, the use of the WebCT site enabled all of the students in the class to meet these objectives.

Technology-Based Assignments

The assignments were evenly spread over the entire course to allow for instructional/tutorial time. Students
who were not already familiar with some of the components of MS OfficeSuite (Word, Access, Excel, PowerPoint) were provided with tutorials in the Course Content section of the WebCT module to assist them in self-directed learning tasks. In addition, peer tutors volunteered to help those unfamiliar with the software.

**MS Word**

Students had two major papers and an authentic piece of children’s literature to write using Word software. The students worked in randomly selected editorial dyads. The formal use of a ‘process writing’ strategy was expected and the dyads edited each other’s work electronically using the Word editing features. Students learned to track text and insert comments. They also utilized the various tools available in this software. Students were required to edit each other’s work at least twice. The work was all shared electronically, as attachments, through the email feature of the WebCT site.

In addition to word processing, students learned how to take and manipulate a variety of digital images. These were used as a part of the children’s literature assignment. Each story was a minimum of 1,000 words and produced entirely with desktop publishing strategies. Each student produced a hardcopy of his/her book and created an archive copy by burning the electronic file onto a CD-R disk.

**MS Access**

In order to write their stories, students were required to locate and read a variety of children’s literature. Each student selected a grade level, researched books written at the identified level, then created a database using MS Access. The database was used in a variety of ways. Its primary purpose was to provide a form of bibliographic evidence supporting the research completed for the book. The database was also used to teach students how to use queries to sort information.

**MS Excel**

In addition to flexibility, organization is a trait that is critical for a teacher to experience success in the classroom. Spreadsheet applications allow a teacher to manage their everyday academic and administrative tasks in a relatively quick and efficient manner. Students were required to use MS Excel to create any form of spreadsheet with classroom applications. Some students chose to create a grade book page while others created data charts that were also converted to graphs. Some students used Excel to create databases. The most rewarding part of the activity occurred when each student presented his/her spreadsheet. Students were amazed at the various applications of the software and the creativity with which the spreadsheets were designed.

**MS PowerPoint and SmartBoard**

All of the students are well acquainted with creating presentations using PowerPoint software by the time they take the EDHL 351 course. In this course, however, the students are expected to teach an entire segment of the textbook using a PowerPoint presentation that is projected onto a SmartBoard. The SmartBoard is a touch sensitive electronic whiteboard that links to a computer. The board is calibrated when turned on to respond to the slightest touch on its surface. The student can present an entire PowerPoint presentation simply by touching different parts of the SmartBoard.

Like the Excel presentations, the PowerPoint presentations were often enlightening for all students. Many students had very sophisticated production abilities that resulted in nearly professional presentations. Their peers did not hesitate to ask, “How did you DO THAT?” Invariably, much was taught and learned by all in the class regarding both the subject content and the use of PowerPoint as a presentation tool.

**Project Evaluation**

All of the projects were evaluated using rubrics. Each project had its own rubric with the task parameters clearly provided. Students received points within three possible categories of performance: exceptional achievement, adequate achievement, needs improvement. The criterion for each level of performance for each task was defined. Students received a copy of the rubric along with the assignment.

**Outcomes**

The students who complete this course are expected to be fluid in their use of basic instructional technologies. Without exception, every student demonstrated the appropriate level of ability in the use of MS OfficeSuite software applications and in their use of digital cameras, the SmartBoard, and other pieces of instructional hardware. The teacher education accrediting organizations require that students meet ISTE standards. Students who completed this course met and surpassed all standards.