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ABSTRACT

Colleges of Education include both undergraduate and graduate students, both preservice and current teachers; this provides them with a unique opportunity to have both groups work together, sharing their expertise, and gaining new perspectives about the use of technology in schools. This paper describes a program where graduate education students work with preservice teachers in an online format, examining ways to use technology as a tool in the classroom. Virtual teams were formed; students exchanged introductions, with the graduates describing what they considered to be the role of technology in the schools, sharing specific instances of their use of technology, and asking for input. As students networked, they acquired and enhanced skills that will promote their professional development in ways specific to their needs now and/or in the future. Virtual teaming promoted personal and professional exchanges in which students shared experiences and visions for the integration of technology into a variety of educational situations. (AEF)

Graduates and Undergraduates – Meeting Online

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GRADUATES AND UNDERGRADUATES—MEETING ONLINE

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Technology integration — growing numbers of educators are suggesting that this should be the role of technology in today's educational system. Computers, at the heart of this technology, should no longer be used as dust-catchers in the corner, or merely as rewards for those students who finish assignments early. They should be more than electronic workbooks or electronic flash cards where traditional educational activities are simply transferred into digital format. Key t this issue, though, is whether teachers have the skills, knowledge, time, and access to allow them to partially or fully integrate technology into their classes.

Technology standards and competencies are being developed to identify specific skills and issues that will facilitate this technology integration throughout the educational arena. The most well-known set of standards has been prepared under the sponsorship of ISTE (the International Society for Technology in Education), and is available both in print (Weibe & Taylor, 1997) and online (ISTE, 1997). Technology competencies are being compiled by a variety of bodies at various levels in the educational system. One of the more extensive listings of technology skills and knowledge is the North Carolina Competencies for Educators (1997), which is available online. With this growing attention to the use of technology within today's schools, it is essential that educators be prepared to integrate this into their classroom learning environments.

Where do teachers learn about this technology? How do we prepare the teachers of today and tomorrow to use technology as an integral tool in their classrooms, as well as in educational endeavors outside the classroom and for professional development?

Colleges of Education are in a unique position to assist with the development of technology skills and knowledge for both preservice teachers, and those who are already teaching. Preservice teachers are often are often required to take one or more technology courses, and there is a definite move to integrate technology into instruction throughout the content and field-based courses. Teachers who come back to school as graduate students may elect to take educational technology classes (or entire degrees), or they may find that they are using or seeing modeled some of the newer technologies, in the course of their studies.

Rationale

Schools have been acquiring*technology*, often in the form of computer hardware and software, but many teachers are not using these effectively or at all to enhance the learning environment of their students. Currently a primary addition to many schools and classrooms is Internet access, along with the related computers, if needed. Will this, too, go the way of many advances—where only some teachers use them, and not all of these do so appropriately?

Teacher education offers one approach to preparing current and future teachers to effectively use technology in their classes. Undergraduate students (preservice teachers) can see the appropriate use of technology modeled, can use it in their university classes, and can also be expected to use these techniques in their K-12 classroom teaching assignments. These students need a broad base of skills, especially since they do not know where they will be working.

Colleges of Education also work with current teachers—graduate students enrolled in degree or additional certification programs. These individuals are looking for ideas to implement in their classrooms, and may be able to get specific technologies for use in their rooms. They come with specific needs and desires, but are often open to suggestions of new approaches, including those involving technology. Currently, the greatest interest is in the use of the Internet to expand the classroom, and to enhance instruction. Teachers have heard that this is possible, but they may not have any idea of what it means.

One Approach

Colleges of Education include both undergraduate and graduate students, both preservice and current teachers—either on their own, or in conjunction with other institutions. This provides them with a unique opportunity, to have both groups work together, sharing their expertise, and gaining new perspectives about the use of technology in the schools. Opportunities for *real-world* experiences related to current professional activities, for mentoring/networking, for the

development of a sense of professionalism, and for on-going personal and professional development abound.

The authors, College of Education faculty members — two working with preservice teachers, and the other with graduate students who are K-12 teachers, have made a commitment to provide students with experiences that will contribute to the development of these ideals. They have worked together to provide students at both levels with appropriate experiences related to each specific course, that will also promote the ideas of networking and sense of professionalism and professional development that will provide educators with tools to use to enhance both their professional and personal lives. Students have found and used Internet resources (including lesson plans), 'published' lesson plans and other resources on the web, and participated in virtual teaming activities. They have interacted with students from their same, as well as different semesters, through the information that has been published on the web.

The Classes

The undergraduate students are in the final year of their preservice program, enrolled in either the intern (in the schools 2 days a week, and in class weekly) or the resident (in the schools full-time, with seminars every other week) semester. Prior to these classes, students have completed a basic computer literacy course (not part of the professional course sequence, as well as an educational technology course (with an emphasis on integrating technology into instruction). Students (other than transfers) already have their university Internet accounts, and have used e-mail and the web in both technology courses. The major stumbling block at this point is the lack of Internet access in the schools where students are serving as interns and residents — although the schools may have Internet access, they are not always open to these students using the Internet from their campuses.

The graduate students, during Fall '97, were enrolled in a special topics class (ETEC597), within the Educational Technology (ETEC) program. The course was titled for the text that was being used — Knapp & Glenn's (1996) *Restructuring Schools with*Technology. All students (except one) were either teachers or administrators in public or private schools. The one exception has experience with Upward Bound, and is completing certification—in her communications during the course, she fit right in with the other educators, and her lack of classroom experience was rarely evident.

The Graduate Course

In Fall, '96, two of the instructors attended a distance education training workshop. As a result, they were able to apply for (and received) a grant to hire a graduate assistant to help with online course development. The course to be designed was a graduate course which would provide support for preservice teachers in secondary education. The graduate assistant, who had successfully completed both the intern and resident semesters as an undergrad, was able to provide valuable input about how the graduate and undergraduate programs could support each other, and worked well as a team member, with the two faculty members.

The course was offered in Fall 97, in an online format, with fourteen students examining ways to use technology as a tool in the classroom. One of the grad students was a Graduate Teaching Assistant, working with the preservice teachers, and she described the undergrad program (the intern and resident semesters) to her classmates, and was available to answer questions throughout the semester. Having her in the class was a great assistance, in helping the graduate students understand the undergrad program, which had changed dramatically from when they had done their student teaching.

To further prepare the graduate students to work with the preservice teachers, the students were asked to submit reflections on what they would share with preservice teachers (PT's), based on the weekly readings, discussions, or experiences. Meanwhile, the (PT's) were using e-mail and the web for communication and information seeking and retrieval. They were also reviewing and critiquing resource pages prepared by previous graduate classes. The critiques were thoughtful, offering valid suggestions, and they were encouraged to share their comments with the original page creators.

Virtual Teams

After midterm, Virtual Teams were formed. For these, students were divided into seven groups, with an average of six people (divided evenly among grad, interns, and residents) per group. Students exchanged introductions, with the graduates describing what they considered to be the role of technology in the schools, sharing specific instances of their use of technology , and asking for input. Despite some technical and other problems (server down, no access in some schools, mis-addressed mail that was returned, etc.), there were some quite valuable (and interesting) exchanges

A sample dialog, centered on one graduate student and her communications with preservice teachers, demonstrates the foundations in networking and professional activity that are among the goals of the program. In the following, *GRAD* indicates the graduate student, an elementary teacher, and the Preservice teachers are indicated by *Pre1*, *Pre2*, etc.

GRAD:

> Dr. E. has great plans for you'll. 597 has an assignment to search the net and find "the site" we think would help you the most when you begin teaching. This will be added to a list that has already been started. There are so many great sites with truckloads of information it would be helpful if we knew the grade and subject you plan to teach so that the site we pick for you would be most beneficial.

Thanks,

After students sent her their information, she replied:

GRAD:

Pre1, Thanks for responding to my e-mail. :-)

I have asked the band teacher at my school to bring me her list of sites that she thinks she has in an educational music organization mag. I will send these to you as soon as I get them and I will surf as well. If nothing else, we should be able to find music types from different countries. This would add a cultural flair.

The band teacher said that many instruments have web pages. She may be getting web pages and newsgroups mixed up; but, either should work for you.

Wish me luck.

GRAD:

Pre2, I was searching the net for technology standards and found this site I thought you might be interested in: http://www.etc.bc.ca/lists/nuggets/english.html

GRAD:

Pre1, Today I have been looking for technology standards(another assignment)and found a site that I think you might like: http://www.etc.bc.ca/lists/nuggets/art_mus.html

There are many music links.

Pre1:

Wow, I checked that site out and it was incredible. I was only able to look at a couple links but have it bookmarked for future reference. That was exactly what I was looking for.

Thanks

Other comments reflected agreement with the original sender, and by reading about and replying to messages describing successful technology use in the classroom, we hope that our preservice teachers will become technology-integrating teachers in their own classrooms, willing to request (and hopefully expecting to find) appropriate technologies available for their use on a daily basis. The following response from one of the undergrads (and similar comments from other students) will hopefully be indicative of that outlook when these students begin their own teaching careers.

I enjoyed your information regarding technology in the classroom. I agree that it is important and relevant. I believe that it will be a necessary tool to implement in all classrooms in the future.

The graduate students were all champions of the value of using technology to promote learning in the classroom, and their enthusiasm was often contagious. The following is from a preservice teacher is amazed at what the grad student is able to do with old computers, and who obviously appreciates and agrees with the grad students positive outlook about the values of integrating technology into the classroom.

I think it is amazing how much you are able to accomplish on your 286s. You sound like someone is really excited about technology and will be ready to use the new technology at the new building. I am a student teacher at a new school, and the technology at this school is outstanding. There are two computer labs, one for each grade, and each teacher has his or her own computer.

The Future

As we await the final student reaction to the project, we are already planning for next semester. The graduate course will be different (Computer Assisted Instruction), and some of the residents will have participated as interns this semester. We will include student activities that relate to various other classes, where grad and undergrad students can use and respond to resources that our previous students have created. Some students from this fall have already mentioned wanting to keep in touch with other members their Virtual Teams, and we will be watching this. In addition, to facilitate this as well as other joint interaction, we will be setting up conference and chat space where current and former students can meet and maybe even collaborate on projects.

Summary

The opportunity for graduate and undergraduate students to work together provides all involved with a broader perspective on ways (and reasons) to integrated technology, as a tool, into the schools. As students networked, they acquired and enhanced skills that will promote their professional development in ways specific to their needs now and/or in the future. Virtual teaming promoted personal and professional exchanges in which students shared experiences and visions for the integration of technology into a variety of educational situations.

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