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Obstacles in Integrating Online Communications Tools into Preservice Teacher Education:

A Case Study

SONER YILDIRIM AND ERCAN KIRAZ

ABSTRACT

This study examines interaction through Electronic Mail (e-mail) among student teachers, their university coordinators, and cooperating teachers, and the influence of this on learning to teach and supervise. The primary focus of this study is to delineate the necessity of using e-mail and other technologies as an important aspect of the whole teacher education program. The study used data from the University of Southern California's Collegial Teacher Education Program. Results indicated that all participants of the study considered e-mail as an important tool for communication, although the level at which they use it varied. This study also revealed that most teacher education programs fail to provide appropriate technology training for preservice teachers. Finally, the authors offer their recommendations for effective integration of technology into teacher education programs.

Introduction

This study was conducted to examine interaction through Electronic Mail (e-mail) between student teachers¹, their university coordinators² and cooperating teachers³, and the influence of this interaction on learning to teach and supervise. Data are drawn from the University of Southern California, Collegial Teacher Education Program. Even though many other factors contribute to the process of learning to teach and supervise, the primary focus of this study was to delineate the necessity of using e-mail as an important aspect of the whole teacher education program. This study further explores the university coordinators', cooperating teachers', and student teachers' perceptions of the current utilization of e-mail throughout the teacher education program.

Background

At the University of Southern California, teacher educators increasingly promote and encourage student teachers to communicate among themselves and with other individuals in the same field. In order for student teachers and cooperating teachers to create a learning environment which promotes their professional development, they should be aware of the benefits of existing communication tools. In a study about the importance of telecommunication, Thomas et al. (1996) advocate that "... teachers and students si-

multaneously learn together about electronic media and teaching. For example, an experienced teacher might help a student teacher learn how to teach . . . at the same time the student teacher might help an experienced teacher develop lesson plans . . ." (p. 165). In addition, e-mail not only promotes mutual development, but also creates opportunities for both the student teacher and the cooperating teacher to overcome limitations of time, and distance. Furthermore, student teachers can use e-mail to exchange ideas regarding their classrooms, curricula, and lesson plans. In reality, however, student teachers often state they have limited opportunity to communicate with their university coordinators and cooperating teachers. It is obvious that the limited opportunity is a result of poor collaboration between public schools and schools of education. Moreover, after completing the required coursework, "student teachers are often sent out alone to different schools that they know little about and with which the university has little contact" (Valli 1992: p. 20). In order for teacher educators to prepare prospective teachers as competent professionals in their future practices, schools of education and public schools should demonstrate a collaborative relationship. Therefore, it is a necessity for teacher educators to communicate and inform each other about how they progress throughout the program. On the other hand, time

and distance may appear to prevent pupils from communicating with each other even though the importance of effective communication is strongly emphasized.

Besides supervising their student teachers and their routine teaching duties, cooperating teachers have many other important responsibilities. These additional professional obligations limit cooperating teachers from sharing their free time with their student teachers. Stanulis & Jeffers (1995) state that the interaction time of the supervising teacher and the student teacher is limited to short periods of time before and after school, or during lunch time. Lack of time often causes limited communication time between both individuals. Thus, supervising efforts become limited to only in-class practices. In fact, both student teachers and supervising teachers need opportunities to assign a specific time for thoughtful inquiry to reflect on their ideas about the teaching profession.

Because of their tremendous potential, new information technologies can overcome some of the problems of communication particularly related to teacher education programs. By the same token, a number of teacher educators are attempting to construct new approaches to teacher education, to develop new paradigms of teacher education based on computer mediated communication. This concept is named as "Teleapprenticeships" (Levin, et. al., cited in Thomas, et. al., 1996: p.165). Teleapprenticeships is different from the traditional experience. In fact, it emphasizes the importance of mutual development of all involved participants.

In light of these facts, the major goal of this study is to investigate how university coordinators, cooperating teachers, and students teachers integrate and use e-mail into their professional development. With these issues in mind, we collected and examined relevant data to address the following issues:

- Competency level of participants in using e-mail,
- Participants' perception of the usefulness of e-mail in teacher education,
- Participants' perception of the value

of e-mail for their professional development, and

- Participants' perception of the current use of technology in their teacher education program.

Methods and Data Sources

Participants and Settings

Nine participants (six student teachers, two cooperating teachers, and one university coordinator) are the main focus of this paper. Student teachers were interested in teaching in multiple subjects (elementary schools). At the time data were collected, student teachers were seniors in an undergraduate program pursuing a bachelor's degree in education and certification to teach. The teacher education program is organized to prepare teachers to teach cross-culturally. Therefore, the field experiences all occurred in metropolitan schools. As a part of the program, student teachers worked with another student teacher as well as a supervising teacher and a university coordinator. The primary reason for partnering two student teachers is to create a collegial environment so that student teachers can participate in joint planning, teaching, assisting each other, and most importantly to appreciate the benefits of establishing collegial behavior. During method courses, university instructors and coordinators focus on integration of subject matter and pedagogy. In field experiences, student teachers are required and expected to draw upon their knowledge of subject matter content gained during their method courses.

The cooperating teachers work closely with their student teachers and university coordinator. The primary role of the cooperating teacher is to monitor and nurture the needs of student teachers in terms of their professional growth. As a representative of school of education, university coordinators also participate in those classrooms where student teachers practice their student teaching. Their role is to supervise both cooperating teachers and student teachers. During this supervision, coordinators are responsible for providing feedback and suggestions on their performance.

Data Sources

Primary data sources for the University of Southern California's Collegial Teaching Program were through interviews and observations. These activities were designed to examine the knowledge, beliefs, and actions of prospective teachers, cooperating teachers, and university coordinators about using e-mail for their professional development within the university and public school settings. In order to gather adequate information about participants' perceptions of using e-mail, researchers conducted site visits to student teachers' public school classrooms and university courses. During site visits to public school classrooms, we observed many feedback sessions between student teachers and cooperating teacher and with the involvement of university coordinator. Most of these sessions took place during very early hours in the morning. Most of the feedback sessions were usually scheduled before classes started, even though there were a few scheduled after classes ended. Most of the feedback sessions were usually limited to 20-30 minutes. In addition to observations, we conducted several group interviews involving all participants to uncover dynamics of their interaction

Data Analysis

As Miles and Huberman (1994) suggested, the data analysis consisted of three simultaneous activities: data reduction, data display, and conclusion drawing. Data reduction included various methods to focus, simplify, and to form distinct categories of the raw data. Data display "an organized, compressed assembly of information that permits conclusion drawing and action" (Miles & Huberman, 1994, p. 10-11), included organization of the data within the categories. Finally, conclusions were drawn in order to move from particulars to a more general class of conclusions.

Results

Student Teachers

Hilda⁴ is a 20-year-old enthusiastic and reflective elementary school teacher. During the interviews, she expressed concerns

about the importance of e-mail in her professional career. She indicated that the computer literacy course she took improved her competency in using computers and e-mail. However, she was not sure how e-mail would contribute to her professional development. She stated:

Basically, I believe that the required computer literacy course I took earlier provided me with necessary skills to consider myself as a competent user of e-mail, because during that course we were required to use e-mail as the main means of communication in the class. Especially, the professor and the teaching assistant strictly encouraged us to send our assignments through e-mail. At the beginning of the course, I felt kind of anxious about computers. I did not think that e-mail would be a way of submitting my class assignments though, because I am used to typing my papers in Word and submit a printed form of them. And, when the TA mentioned the necessity of using this technology in my professional development, I really couldn't get it. Besides this computer literacy course, I didn't have to use e-mail for other courses. So, I still have problems with understanding how e-mail could help me to grow professionally. But I believe e-mail has lots to offer. It saves me time, money, and it is less hassle.

Hilda indicated that her perception of computers and e-mail changed during the computer literacy course in which she was required to use e-mail. As she started using e-mail regularly, she felt more confident and better conceived the need for e-mail. However, she also expressed that one required computer literacy course was not enough to use technology in her professional development. Her concerns parallel the current literature.

Similarly, other four student teachers also stated that the computer literacy course they took helped them develop positive attitudes toward online communication tools by making them more at ease with using those applications and helping them gain more confidence. They also underlined the importance of a follow-up course for their professional development. For example, one student teacher said, "the computer literacy

course I took breezed over a lot of information because of the time frame, but for our professional development, a follow-up course is needed."

Most teacher educators admit that one required computer literacy course for educators is of limited value if it is isolated from the rest of the teacher education curriculum (Nies, 1990; Hess, 1992; Wetzel, 1993; Yildirim, 1997). For example, Novak & Knowles (1991) examined beginning elementary teachers' use of computers in classroom education. They discovered that computer usage was not emphasized in their first year of teaching experiences because new teachers viewed computers as "extra" and "special," not as general tools to enhance the instructional process. This study supports the position that technology training needs to be integrated into the entire pre-service teacher education program so that pre-service teachers accept it as a means to enhance teaching and learning.

Gloria is also a multiple subjects student teacher. She had an interesting perception of using e-mail similar to Hilda's. During the interviews, we focused on Gloria's perception of e-mail in terms of its contribution to her professional development and how feedback sessions can be conducted or improved through e-mail. Unlike other student teachers, Gloria perceived computers as being inhuman. For example, she commented:

Even though I was required to take an educational computing course and practice using e-mail, I didn't feel comfortable to use it at all. First of all, computers are too inhuman for me. Then, when I prepare my lesson plans, I'd rather use more advanced applications such as Microsoft Word, or Word Perfect, because you can create such a nice format. I don't know how e-mail can be a time saver or how I can prepare a neat lesson plan by using it. I could use e-mail to communicate with my cooperating teacher but she does not use e-mail.

Gloria's case presents a common example of technophobic behavior. Because

of her negative attitude towards computers as being inhuman, she could not develop positive attitudes toward e-mail either. Woodrow (1991) specifically underlines, in the literature, the importance of pre-service teachers' positive attitudes toward computers.

"Attitudes toward computers are thought to influence not only the acceptance of computers, but also future behaviors, such as using a computer as a professional tool or introducing computer applications into the classroom. For this reason, the promotion and maintenance of positive attitudes toward computers, especially among pre-service teachers, is of paramount importance." (p. 165).

It is a fact that negative attitudes toward computers influence the learning process. For example, Simonson (1995) emphasizes the importance of positive attitudes in learning process. He claims that promoting positive attitudes will also promote achievement, liking, and learning.

As we discussed Gloria's case with her cooperating teacher, we discovered that the cooperating teacher also did not consider e-mail a promoting factor in her professional development in teaching. It was not surprising that Gloria perceived computers as being inhuman, because her cooperating teacher was also in favor of face-to-face communication, rather than computer mediated communication. In the literature, researchers indicated that often student teachers copy or mimic their cooperating teacher's behaviours (Guyton & McIntyre, 1990; Valli, 1992). In many instances, field-base experiences appear to undermine the theoretical work being done at the higher education institutions and cooperating teachers do not appear to provide enough feedback and encouragement to their student teachers (Meade, 1991; Browne, 1992). In Gloria's case, it is obvious that her cooperating teachers' attitude toward computer based communication reflects on Gloria's personal belief about computers.

Monica's opinions about technology and its utilization in education are differ-

ent than Gloria's. Monica believes that every classroom teacher in the 21st century should be able to use and benefit from computer technology. She believes in different ways of communication in different times and places. She indicated that she learns constantly and spends much of her time in computer labs. Her close relationship with computers and its usage can be seen in her statements:

I have always dreamed about playing with computers. First, computer games attracted me, then I started playing more and I clicked, clicked! and found many interesting things. I have a very large family back East, nieces, nephews, cousins I mean a lot. We all write letters, talk on the phone. But, recently, I started sending them e-mail then, of course, I received a lot . . . I go to the computer room almost everyday; sometimes twice a day. Reading e-mail, news from all over the world, talking to other people from different cities and countries through e-mail is great. But I cannot really say how I can use this technology for my professional development or in education. Even though I know how to use it, I do not think I am ready to integrate it into my profession.

Likewise, another student teacher stated that ". . . because I am a teacher, it is essential for me to be somewhat computer literate. I really feel every child should become computer literate and it is our responsibility to teach them about computers if we want them to succeed in the next century." She further stated that, ". . . knowing how to use computers is important, but we also need to know how to teach with them. This is what cannot find in our training."

With the exception of a few colleges of education, many teacher education programs fail to incorporate technology into their curricula outside of computer literacy or instructional technology courses (Turner, 1989). Some researchers confirm that technology is used in some method courses for the delivery of instruction, but upon closer examination, the range of technologies employed are very limited.

Vagle & College (1995; p. 241-242) provided some obstacles that prevent the teaching methods instructors from including technology in their courses. First, most institutions do not require a technology course for pre-service teachers until the third or fourth year of their education. As a result, the instructors of the teaching methods are given the responsibility of teaching not only the content and application of technology but also the basic skills required by pre-service teachers. The teaching methods instructors are not only incompetent for the task but also there is not adequate time to do so. Second, the teaching methods instructors require more and constant assistance from the educational technology experts in developing their hardware and software skills. Finally, a wide variety of technologies are provided in the lab and they are usually not available for the teaching methods courses. The problem of non-inclusion of technology in the teaching methods courses cannot be solved unless technologies are available for the instructors.

Cooperating Teachers

Ms. Anderson is an elementary school teacher with more than seven years of experience. She has supervised many student teachers. She has strong beliefs about learning to teach and the role of technology in this matter. However, she admitted that she did not have opportunity to advance herself in using computers. Therefore, she has a low level of competency even though she values the potential of computer technologies in professional development of teachers. During the observations we saw that every teacher in the same school as Ms. Anderson has a notebook computer provided by the school district. In addition to notebook computers, each teacher also has a required e-mail account.

Like other teachers in the school, I also attended workshop seminars on using e-mail and other computer skills. But, I have many other responsibilities in my job; I really don't have enough time to figure out how e-mail can improve my interaction with my student teachers. I don't see the real use of it in what

I am doing as a cooperating teacher . . . for example, my eighth graders are perfectly capable of searching on the net and discovering information they need. It is really exciting to me, too. But I really don't understand how e-mail can improve my professional relationship with my student teachers. We already regularly meet at least three times in a week, and my stand point on this issue is that face-to-face feedback sessions are essential for my students. This is what I cannot find in e-mail.

Another cooperating teacher we interviewed stated that she needs further training to improve her computer skills. For example, she commented that, "I attended seminars and training sessions on computers. I am definitely a lot better than when I first began, but I wish there were more courses offered and I had more time to attend, so I would feel more comfortable to use computers . . . for me, face-to-face communication is still the most convenient way of communicating with my student teachers."

Inefficient pre-service and inservice teacher training has been considered the most common barrier to wider use of information technologies by teachers. The literature on this issue indicates that most teachers do not feel prepared to use new technologies in their teaching (see OTA report, 1988). Faculty members of teacher education programs also indicate they need continued training and support in order to be able to use educational information technologies in their professional practices. The Office of Technology Assessment (1995) reported that access to resources, faculty comfort level, attitudes, training, and staff and institutional support may become a barrier to wider use of information technology in teacher education (p. 187-191). In this case, cooperating teachers clearly indicate that their previous training is not enough to use technology effectively in their profession.

University Coordinator

The university coordinator's role is to ensure the web of interaction between all parties, including student teacher, coop-

erating teacher, and the university. Ms. Johnson is responsible for improving supervisory techniques of cooperating teachers and professional development of student teachers. Ms. Johnson regularly visits her student teachers' classroom, observes them, and conducts feedback sessions with her student teachers to improve their teaching performances. During these regular visits, she discusses the success or failure of the student teachers in individual meetings and sometimes with the participation of the cooperating teacher. She also conducts meeting sessions with all of her student teachers to hear about their progress. These meeting sessions mostly occur during the early hours in the morning and are limited to 20-30 minutes. One of the primary reasons for Ms. Johnson's early morning meetings is to bring all students together around a table and provide them with an opportunity to express themselves to their colleagues and provide solutions for the problems that they face during student teaching. By creating a collegial environment, Ms. Johnson is well aware that her role is not only to supervise or coordinate but also to improve the interaction and communication among pupils.

During our interview with Ms. Johnson, we saw that face to face communication is more important than telecommunication. She stated:

I believe that my student teachers have enough background in using e-mail and other new telecommunication tools. But I really cannot explain myself in computer mediated communication, because when you are at the other end of the line, it is sometimes impossible to answer all the questions you receive. For instance, as I need to draw a map in seating arrangements of the students in classrooms, I need to use a pen and paper to explain myself more clearly. But with e-mail I feel that I am limited. I am sure there are other technologies that I can use for this, but I am not aware of them.

Ms. Johnson's concern about e-mail as having limited symbolic representation is

recognized as a limitation to e-mail communication in the related literature. For instance, Bates (1995) claims that "... there are difficulties for most end-users in creating graphics as part of messages in most systems, although file transfer, i.e., inserting an existing computer file (which may contain graphics) into an e-mail or conferencing message, is becoming prevalent. Nevertheless, the procedures to do this are still clumsy in most programs." (p. 212)

It is obvious from Ms. Johnson's statements that the advantages of e-mail cannot eliminate the need for face-to-face communication. Face-to-face communication is especially important in getting all student teachers and cooperating teachers started, in negotiating issues, and in problem solving. "... [B]ut with electronic group mail, there can be less total time devoted to meetings and a higher proportion of meeting time devoted to functions for which face-to-face communication is best suited." (Sproull & Kiesler, 1993: p.30-31)

Conclusions and Recommendations

In this case study, we examined the current utilization of e-mail among student teachers, cooperating teachers, and university coordinators. Data from a case study of the teacher education program at the University of Southern California indicate that all participants of the study consider e-mail as an important tool for communication, although the level at which they used it varied.

One of the most important findings of this study is that for teacher educators and student teachers, constant training and institutional support are critical factors to integrate e-mail and other technologies into the teacher education program. All participants stated that they need to be prepared for the technology enriched classrooms of the 21st century. They all indicated that they are aware of the value of e-mail in communication. However, their statements about integrating e-mail into the teacher education program clearly indicate that they are not prepared to in-

tegrate e-mail into their professional development. Therefore, teacher education institutions should take the initiative to employ new policies to incorporate technology into their curricula outside of computer literacy courses.

Another important finding is that participants show some degree of anxiety toward computers. As the use of computers receives wider acceptance in education, computer anxiety remains a challenging concern. Beyond any doubt, teachers need to have the necessary training and support to properly integrate computers into their practices. Particularly, teachers should not be anxious about the use of computers. "... [F]urther they need confidence and positive attitudes toward computers and their ability to use them." (Bohlin & Hunt, 1995: p.263). Therefore, teacher training institutions and school districts should cooperate in designing technology-training curricula according to the individual's level of confidence, anxiety, and competency.

This case study indicates that student teachers are more experienced than their cooperating teachers in terms of using new technologies although student teachers are usually perceived as inexperienced with limited knowledge about the teaching profession. In fact, many student teachers have the potential to create a reciprocal support system for both student teacher and supervising teacher (Kiraz, 1997). Therefore, teacher training institutions and school districts should cooperate in providing inservice training for cooperating teachers to help them improve their computer skills.

It is a fact that we teach as we are taught. Therefore, cooperating teachers, university coordinators and faculty of teacher education programs should demonstrate their competency and willingness to use technology in teaching. They should be role models for prospective teachers in integrating technology into classroom teaching, if they are to meet their students' needs for the next century.

Even though this study revealed some important findings on how e-mail technology is being used in a teacher education program, a further study is needed to un-

derstand how the use of e-mail and other on-line communication tools can be promoted in teacher education. It is also necessary to conduct a longitudinal study to examine how the attitudes of student teachers, cooperating teachers, and university coordinators toward online communication tools in teacher education can be improved via a course or in-service training.

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Endnotes

¹Student Teacher: A university student who participates in a teaching training program to practice and learn the methodology and skills of teaching.

²University Coordinator: A university coordinator whose role parallels that of the cooperating teacher in terms of assisting student teachers in acquisition of teaching and assisting cooperating teachers in improving their supervision.

³Cooperating Teacher: A classroom teacher whose role in the teacher education program is to work directly with student teachers who participate in the student teaching (clinical) experience.

⁴Hilda is a pseudonym for one of the student teachers who participated in the study. Participants' real names were kept confidential in this study.

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