



Reexamining the Practicum Placement: How to Leverage Technology to Prepare Preservice Teachers for the Demands of the 21st Century

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Abstract

While many factors are taken into account when identifying appropriate practicum placements, effective technology use by the classroom teacher is rarely considered. This is disconcerting given the recent emphasis on teacher technology preparation. The research described in this article studies 30 preservice teachers' participation in a six-week virtual practicum. The practicum took place completely over the Internet and allowed the preservice teachers to interact with and observe experienced classroom teachers as they implemented high-quality technology-supported literacy instruction. Using constant-comparative methods, field notes, e-mail correspondences, and survey responses were analyzed in relation to the three research questions: (1) How does a virtual practicum create opportunities to learn ways to manage technology integration in the classroom? (2) How does a virtual practicum create opportunities to learn ways to integrate technology into literacy instruction? and (3) How does a shared practicum experience allow preservice teachers to engage in class discussions and problem-solve issues confronted in their host classrooms?

Practicum placements have been integral components of the teacher preparation process for many years. They were designed, in large measure, to aid preservice teachers' transfer of theory to practice by providing opportunities to implement university course content in real classroom settings. It is a widely held belief that more time spent in the field will lead to better understandings of the teaching profession (Kyriacou & Stephens, 1999). Thus, many schools and colleges of education have incorporated practicum placements into much of their coursework, giving preservice teachers the benefit of multiple experiences.

A number of factors are considered when identifying practicum placements, including compatibility of content learned in university classrooms with that observed in the field, host teachers' reputations and years of experience, proximity of placements to the university campus, and diversity of the host school population (Dexter & Riedel, 2003; Zeichner, 2002). Interestingly, however, effective technology use by the host teacher is rarely a consideration. This could be due to the fact that few host teachers have skills and capabilities to implement and model effective use of technology (Dexter & Reidel, 2003).

The absence of effective technology use in most practicum placements is disconcerting given the heavy emphasis on technology competencies by both the federal government and education organizations. The *National Educational Technology Plan* (2005) developed by the United States Department of Education, for example, urges teachers to rethink traditional methods of teaching and learning to take advantage of the Internet's capabilities, better preparing students to compete in the "technologically driven world" (p. 5). The International Reading Association (2001) strongly recommends teacher educators provide multiple opportunities for preservice teachers to practice

using technology in K–12 settings so they are prepared to teach the new literacies of the 21st century. Further, the National Council for Accreditation of Teacher Education (NCATE) requires schools and colleges of education to envelop the National Education Technology Standards for Teachers (ISTE, 2001) in their coursework in order to receive accreditation.

The emphasis on technology competencies and the importance of identifying host teachers who model effective technology use requires teacher educators to consider the ways in which they prepare new teachers to integrate technology. Programs that currently incorporate technology preparation tend to do so in one of two ways (Vannatta, 2000). One way is the isolated approach, requiring preservice teachers to take individual technology courses separate from methods content. Much like the polarization of theory and practice in teacher education (Barone, Berliner, Blanchard, Casanova, & McGowan, 1996), technology is taught separate from content. This, in turn, gives prospective teachers a faulty interpretation of how technology should be implemented in K–12 classrooms. The lack of situated learning makes it impossible for them to conceptualize how to use technology to support student learning, how to trouble-shoot technological problems, or how to respond to queries about technology-based lessons.

The second approach is to integrate technology into methods courses (e.g., Crowe, 2004). Specifically, with this approach preservice teachers design technology-based lessons focused on course content while using their instructor's technology integration as the model for effective classroom use. Although this is more ideal (Vannatta & Beyerbach, 2000), it neglects one very important point. University methods courses are not mirrors of elementary classrooms. That is, this approach does not provide preservice teachers with opportunities to observe actual classroom teachers effectively integrating technology in the various content areas with their students.

As a literacy professor whose research interest focuses on the relationship between literacy and technology, I chose to study this very important problem in my own methods course. How could I provide new teachers with concrete examples of how to effectively integrate technology into their literacy teaching? The search for the answer led me to develop a virtual practicum placement; virtual in that the computer created an online community for students to interact with and observe experienced classroom teachers as they implemented high-quality technology-supported literacy instruction.

Conceptualizing the Virtual Practicum

The critical nature of practicum placements necessitates careful consideration when developing appropriate experiences for preservice teachers. Unfortunately, many times their design is the result of convenience and/or tradition (Guyton & McIntyre, 1990). Framing the virtual practicum within educational theory, particularly that which emphasizes situated

learning (Brown, Collins, & Duguid, 1989), helps to clarify how this type of experience can benefit the teacher preparation process.

Research has shown that preservice teachers struggle to transfer theory to practice (e.g., Korthagen & Kessels, 1999; Moore, 2003). This disconnect may stem from the structure of isolated courses or the lack of opportunities to observe effective instruction by experienced teachers. Viewing the practicum placement from a situated learning perspective, Korthagen and Kessel (1999) argue for a *realistic approach* to teacher education, where field placements (i.e., situations) drive the learning done in the university classroom. The foundation for this approach is built on the assumption that the transfer problem will decrease if preservice teachers are encouraged to reflect upon “practical situation[s] in which a personal need for learning was created” (p. 7). They posit that the majority of content learned in teacher education courses is *epistemic* knowledge, that is, general concepts related to teaching and learning. Instead, the emphasis should be on *phronesis* knowledge, which focuses on perceptions of real situations confronted in classrooms followed by opportunities to discuss and reflect upon ways to react.

The Internet creates a fertile environment for these real-life situations, one that can expose them to people of different cultures, places, and religions (Luke, 2000). By using the technology as a way to gain access to other educational settings, preservice teachers enter into the culture of the classroom and see first-hand how technology is used by experienced teachers to support instruction within their particular environments.

The research described in this article studies preservice teachers’ participation in a six-week virtual practicum in a beginning literacy methods course. The preservice teachers participated in the same activities with the same host teachers and were given opportunities in class to discuss their questions and concerns. I was most interested in how the virtual practicum created situated learning opportunities from which the preservice teachers could learn. The three research questions guiding this work were:

1. How does a virtual practicum create opportunities to learn ways to manage technology integration in the classroom?
2. How does a virtual practicum create opportunities to learn ways to integrate technology into literacy instruction?
3. How does a shared practicum experience allow preservice teachers to engage in class discussions and problem-solve issues confronted in their host classrooms?

Methods

The implementation of the virtual practicum had three purposes. First, I wanted to design an experience that would embed technology within the required content of a beginning literacy course. Second, I wanted to create opportunities for my students to learn how to integrate technology into literacy instruction from experienced teachers. Third, I wanted all of my students to participate in the same practicum, making it an integral component of the literacy course. To accomplish these, I contacted Ms. Kohl, a fourth grade teacher from Wisconsin, and Mrs. McGrath, a first grade teacher from New Jersey, whom I had worked with on several other technology research projects. Both were acknowledged by their colleagues and the International Reading Association as exemplary at modeling how to integrate technology into instruction. Together we designed a six-week virtual practicum, which allowed my preservice teachers the opportunity to conduct a literature-based collaborative Internet project (Karchmer-Klien & Layton, 2006; Harris, 1998) with their elementary students. The practicum relied mostly on Internet communication by e-mail and published Web pages, as well as the use of basic word processing programs, scanners, and digital cameras. Because this was the first time we had implemented this experience, we (the host teachers and me) decided to focus more on the process of integrating technology into literacy instruction than on sophisticated technology programs.

Steps of the Virtual Practicum

The virtual practicum took place over six weeks during the semester and was conducted completely over the Internet. It had seven steps. Table 1 outlines each along with the corresponding participants. The first step was an introduction to the two host teachers’ instruction, classroom environment, and philosophies towards teaching. Outside of class, preservice teachers were required to review the host teachers’ extensive classroom Web pages where teacher biographies, student work, and classroom and school information were posted and updated regularly. The purpose of this step was to familiarize the preservice teachers with Ms. Kohl and Mrs. McGrath and their work and to give them a sense of how technology could be used to enhance literacy instruction.

The second and third steps included the implementation of in-class literature discussions followed by e-mail correspondences about the text between the preservice teachers and the elementary students. The preservice teachers and the elementary students read the same text, *Tales of a Fourth Grade Nothing* (Blume, 1976), and followed a similar schedule so that everyone was reading the same chapters at the same time. However, the text was read and discussed differently depending upon the class. The preservice teachers and the fourth graders read independently and then participated in literature circle discussions in class (for a detailed explanation of literature circles, see Daniels, 2002). Because the text was written at a third grade reading level, Mrs. McGrath shared it as a read aloud with her first grade students. Instead of literature circles, she followed each chapter with a whole-class discussion usually focusing on connections between the text and other books read in class or students’ personal experiences. The structure of these literature discussions was important for the preservice teachers to consider and participate in as they were concurrently learning in class about organizing reading instruction. The e-mail partnership occurred as the text was read and required the preservice teachers to correspond with at least one elementary student about the text. The preservice teachers constructed and sent their e-mail on their own time while the elementary students wrote theirs in class. This correspondence provided opportunities for both sets of participants to discuss their feelings about events in the text and to ask questions of each other.

The fourth step of the virtual practicum was the development of technology-based extension activities by the preservice teachers. Once completing the text and studying literacy theory and practices (Morrow, Gambrell, & Pressley, 2003), the preservice teachers were grouped and required to develop at least three extension activities that supported the text’s content and literacy skills and required technology to create. For example, below is an activity developed to reinforce comprehension, vocabulary and writing:

Write and illustrate a front-page news article highlighting the whereabouts of Fudge after a family trip to the movie theater. Be sure to include detail and proofread your work. Your work will be posted on the project Web site so you will need to create it in KidPix or scan your pictures into the computer.

The purpose of this step was to require the preservice teachers to work together to develop activities that appropriately supported the text and incorporated technology. For ideas, the preservice teachers spent time in small groups looking at the host teachers’ classroom Web sites, reviewing Internet projects their classes participated in previously.

The fifth step required the elementary students to respond to at least one extension activity. Each activity warranted the use of different technologies, yet all were basic. For example, the activity above entailed word processing, graphics software, or a scanner (depending upon if the student wanted to include hand-drawn pictures). Other activities required

digital cameras or traditional paper/pencil/markers. The activities were e-mailed to Mrs. McGrath and Ms. Kohl who shared the list with their students. Their students chose which activities to respond to and they worked on them during the school day. The completed work was posted on the virtual practicum Web site either by the host teacher, as in Mrs. McGrath's case, or by the students, as in Ms. Kohl's. Figure 1 is an example of a fourth grader's response to the activity listed above. The purpose of this step was to give the preservice teachers the opportunity to see how real elementary students' interpreted their activities.

The sixth step of the virtual practicum was the evaluation of the completed extension activities. The preservice teachers discussed the elementary students' work in class. Likewise, the elementary students, along with their teachers, informally evaluated all of the posted work during whole group review of the Web site. These comments were subsequently shared and discussed among the preservice teachers in class.

The final step took place throughout the course of the virtual practicum. The preservice teachers and I discussed, problem-solved, and posed questions about the practicum during class time each week. During this time all e-mail correspondences between the instructor and host teachers were shared with the preservice teachers. These e-mails focused on the management of the virtual practicum specifically related to time and scheduling issues, organization of the literature discussions, technology issues, and student attendance. Moreover, the preservice teachers were encouraged to contact Ms. Kohl and Mrs. McGrath with any questions they had throughout the practicum. This was a critical step as it shared with the preservice teachers the design of the virtual practicum and allowed them to directly interact with the host teachers.

Participants

A total of 30 preservice teachers who were enrolled in either a regular or special education master's level teacher preparation program participated in the virtual practicum. Participants' real names have been replaced by pseudonyms throughout this article. Of the participants, four were African-American, 26 were European-American; 29 were women, and one was male. The majority of students were nontraditional in that they were returning to school after pursuing careers outside the field of education. Their ages ranged from 23 to 55 years. All students had personal Internet access and were fluent in e-mail and the use of Blackboard, an online educational software tool. None of them had experience with collaborative literacy projects, nor integrating the Internet into literacy instruction. As part of their academic program, students were completing a traditional practicum placement at the same time they were enrolled in this course. While Internet access was available in their host classrooms,

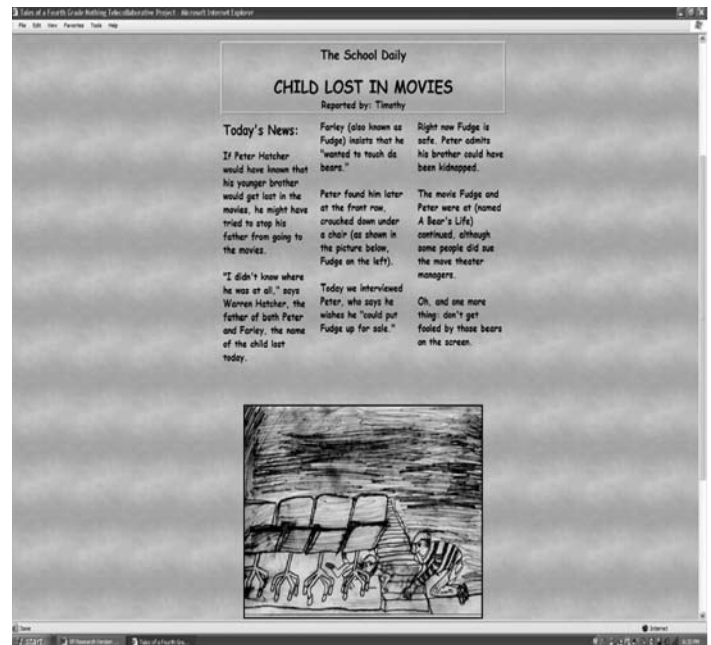


Figure 1: Example of a fourth-grader's response to an extension activity

none of the students were exposed to regular Internet use to support the literacy curriculum.

Ms. Kohl taught fourth grade in Wisconsin. Her classroom was equipped with seven computers with connected printers, scanners, Zip drives, and one networked iBook where students could navigate the Internet. Most of her students were fluent in several graphics applications as well as fundamental keyboarding skills. They were also able to navigate the Internet, had experience reading and writing Web-based texts, and had participated in Internet projects with other classrooms. School policy did not allow students to have their own e-mail accounts. Therefore, all e-mail correspondences were sent and received through Ms. Kohl's account. Her students, however, were able to post their work on the classroom Web site.

Mrs. McGrath taught first grade in New Jersey. Several of her students had basic keyboarding skills. While there was one Internet-connected computer in the classroom, the students never searched the Web independently or with other classmates. All Internet searches were done with the teacher. However, the students did participate in several Internet projects with other elementary classrooms during the school year so they were familiar with the concept of the Internet and how they could

Table 1: Steps of the Literature-Based Internet Project as Part of the Virtual Practicum

Participants	Step #1	Step #2	Step #3	Step #4	Step #5	Step #6	Step #7
Preservice Teachers	Reviewed host teachers' classroom Web pages	Read text outside of class and participated in literature circles in class	E-mailed correspondence with elementary students to discuss text	Developed extension activities based upon text	N/A	Evaluated elementary students' responses to extension projects	Discussed, problem-solved, and posed questions in class about the practicum
Mrs. McGrath's 1 st Grade Students	N/A	Read text as a read aloud in class and participated in whole class discussions.	E-mailed correspondence with preservice teachers to discuss text	N/A	Completed at least one extension activity	Evaluated the completed responses to extension projects	N/A
Ms. Kohl's 4 th Grade Students	N/A	Read text outside of class and participated in literature circles in class	E-mailed correspondence with preservice teachers to discuss text	N/A	Completed at least one extension activity	Evaluated the completed responses to extension projects	N/A

communicate with others. Mrs. McGrath was responsible for posting all student work on the classroom Web site and for sending and receiving e-mail correspondences.

Data Collection and Analysis

This article shares the analysis of several data sets collected during different steps of the virtual practicum. One set of data included a variety of e-mail correspondences including those between (1) the preservice teachers and the elementary students, (2) the instructor and the host teachers, and (3) the preservice teachers and the host teachers. A second set of data consisted of field notes of class discussions. As the instructor, I kept general notes during class and wrote more descriptive ones immediately afterwards. These notes documented the preservice teachers' concerns, comments, questions, and discussions related to the practicum voiced during class.

An initial informal analysis was done as these two data sets were collected. I coded them using constant-comparative methodology (Bogdan & Biklen, 1998) by first reviewing the texts, highlighting key words and phrases, and making notations in the margins reflecting my initial thoughts. During this review I made lists of the most commonly occurring keywords and phrases, which later became initial coding categories. At the end of each week I wrote memos describing how I perceived the data to relate to my research questions. These memos helped me see patterns within the categories represented in the data. During the final week of the virtual practicum I reviewed the memos and all of my notes by creating an Excel spreadsheet where I compared and crosschecked each category with information from the different data sources. Categories included: (1) future technology integration, (2) differences in virtual and traditional practicum, (3) hands-on experience, (4) awareness, (5) management, (6) innovative ideas, and (7) communication. This triangulation of data sources (Patton, 1990) helped illuminate the most salient categories related to the research questions and also highlighted those with little supportive evidence.

I took the results of this initial data analysis and constructed a survey for the preservice teachers asking them to evaluate the virtual practicum experience. The purpose of the survey was two-fold. First, it was designed to solicit more in-depth information about the steps associated with the virtual practicum. Second, it was used to collect additional evidence to support or disprove the initial categories found during preliminary analysis.

The survey was given at the end of the academic semester. It included eight Likert scale questions and six open-ended questions (see Appendix A). This design allowed for variation of information and depth of response (Alreck & Settle, 1995). The Likert-scale questions asked students to rate the steps of the virtual practicum. For instance, participants were asked to rate the e-mail correspondences with their elementary key pal, the helpfulness of generating extension projects, the helpfulness of viewing the elementary students' work on the Web site, and how much the virtual practicum motivated them to integrate the Internet into their own instruction. Since the ratings only provided a snapshot of their feelings towards the virtual practicum, the survey asked participants to explain their ratings. Additionally, there were six open-ended questions included in the survey. These further probed the initial categories identified during preliminary data analysis. For instance, one of the initial categories was *hands-on experience*, which developed from the preservice teachers in-class talk about how the virtual practicum gave them real opportunities to integrate technology into their future teaching. This was in contrast to the traditional practicum placement where none of them saw their host teacher using technology. To learn more about the differences between the two practica, the survey included the question, "What differences do you see between the virtual practicum and the traditional practicum

Table 2: Likert-Scale Responses to Survey Questions. N=30

Question	1	2	3	4
The reading and literature circle discussions were informative	0	1 (3%)	11 (37%)	18 (60%)
The e-mail correspondences with my elementary key pal were worthwhile.	0	2 (7%)	12 (40%)	16 (53%)
I found it helpful to generate a list of extension activities	0	1 (3%)	5 (17%)	24 (80%)
I found it helpful to view the elementary students' work on the Web site.	0	0	8 (27%)	22 (73%)
I found it helpful to discuss practicum issues and questions with my classmates.	0	0	6 (20%)	24 (80%)
I feel the virtual practicum provided an explicit model for how to integrate the Internet into literacy instruction.	0	0	10 (33%)	20 (67%)
Participating in a virtual practicum has motivated me to integrate the Internet into my own instruction.	0	5 (17%)	10 (33%)	15 (50%)
Overall, I feel the virtual practicum was a worthwhile experience.	0	0	9 (30%)	21 (70%)

1 = Strongly Disagree 2 = Disagree 3 = Agree 4 = Strongly Agree

placement?" This open-ended question encouraged students to compare the two experiences.

The ratings generated from the Likert-scale were analyzed by tabulating responses and calculating percentages (see Table 2). These data illustrated the preservice teachers' opinions about the steps associated with the virtual practicum. However, the explanations of the ratings provided richer detail by describing the reasoning behind the given ratings. A similar procedure to what was done during the initial stages of analysis was followed where I read and reread the explanations looking for evidence to confirm or disprove the categories identified during the initial data analysis. Again I highlighted keywords and phrases, and made notations in the margins. The same procedure was used to code the open-ended questions. These methods helped illuminate how the identified categories connected to each of the three research questions.

Findings

Data analysis provided information in relation to each of the three research questions. This section is organized around these questions with exemplars from the data to illustrate the major themes.

How does a virtual practicum create opportunities to learn ways to manage technology integration in the classroom?

Much has been written about the benefits of learning from exemplary teachers (Johnson, 2005; Coiro, 2005). Teale, Leu, Labbo, and Kinzer (2002) state "Experts differ from novices in that they have a richer base of knowledge, are able to recognize patterns, and are fluent in applying knowledge and solving problems in practical situations" (p. 655). Data analysis revealed the preservice teachers learned how to manage three technology issues by observing Ms. Kohl and Mrs. McGrath throughout the virtual practicum: e-mail communication, technology projects, and Internet safety.

Though the preservice teachers had personal experience with e-mail, none ever corresponded with youngsters, let alone designed e-mail partnerships as a classroom activity. Hence, the host teachers' management and procedures proved integral to the preservice teachers' learning. For example, in class I shared e-mail conversations with the preservice teachers

that discussed how Ms. Kohl and Mrs. McGrath dealt with the absence of student e-mail account access in their schools. Ms. Kohl's students typed their messages in a word processing program and Ms. Kohl pasted them into an e-mail program using her personal account. Mrs. McGrath dealt with this issue similarly; however her first graders did not have the skills to type their own messages on the computer. This, in turn, added another step to the process for her. First, her students dictated their messages as she wrote them on paper and after school she typed and e-mailed them to the preservice teachers. Both teachers followed similar procedures when receiving e-mails from the preservice teachers by sharing hard copies with their students. Mrs. McGrath read them with her first graders while the fourth graders read them independently.

A second issue was how to manage computer use so students could create their responses to the extension activities. This was an issue well-described by Mrs. Kohl. She had seven computers in her classroom which meant her fourth-graders had to take turns using the technology. To ensure the computer time was productive, students had to first complete a lengthy revision process using paper and pencil. Ms. Kohl did not allow her students to brainstorm on the computer and this was a much-discussed issue among the preservice teachers. One night in class the preservice teachers discussed ways of drafting assignments. All of them stated they wrote their class assignments directly on the computer, not drafting them first with paper and pencil. They understood Ms. Kohl's decision was a logistical issue, one that many teachers confront. However, they recognized the process added more time to the length of the activity.

A third issue the preservice teachers learned to manage was Internet safety. Several of Ms. Kohl's students' parents did not want their child's real name used on the project Web site or for e-mail correspondences. Ms. Kohl assigned these students pseudonyms. The policy at Mrs. McGrath's schools was to use first names only when posting information on the Internet. Again, the preservice teachers learned from the host teachers' accounts of how they approached these situations.

The host teachers' models and discussions of the procedural issues proved critical to the preservice teachers' conceptualization of the virtual practicum. For instance, since they were only responsible for their own e-mail messages, the preservice teachers had not considered the obstacles they could potentially confront when implementing an e-mail partnership in their own future classrooms. Their survey responses clearly articulated this. Julie commented, "I never thought about everything that goes into sharing e-mails, especially in elementary schools." Sheila echoed her sentiments stating, "I never would have thought about all of these things—Internet safety, who sends the e-mails, and where to find the time to get all of this done."

The exposure to experienced teachers who could resolve technology-related problems was an important factor in the preservice teachers' learning. However, it is important to note that while the survey results indicated 83% of the preservice teachers were motivated by the virtual practicum to integrate technology into their own instruction, there was a small percentage of students who were not (17%). Data indicated management was the primary issue. This was captured in the survey results:

- I'm still not sure if or when I would do a collaborative Internet project with my students. It would depend on their age and maturity level, the available resources in the school, and if there is time to do the activity.
- The collaborative Internet project motivated me to integrate the Internet into my own literacy instruction further down the road in my teaching career. However, I doubt I will try to attempt a project such as this during my first year of teaching simply because I am unfamiliar with the way things operate. Perhaps I could try something like this during my second year of teaching.

How does a virtual practicum create opportunities to learn ways to integrate technology into literacy instruction?

Beginning fall 2001, the university site of this study required students to own a personal computer. The administration recognized the importance of technology and felt it important to prepare university students with basic computer knowledge. Furthermore, for certification, the state required preservice teachers to fulfill a technology requirement either through a computer proficiency exam or by the completion of a basic technology course. The teacher preparation program allowed students to choose one of the options and the local school divisions required documentation of its successful completion prior to interviewing. The university requirement coupled with the state and local level emphasis on technology skills supported the rationale for integrating the Internet into the literacy methods course.

The virtual practicum integrated technology into literacy instruction in three ways. First, it used the Internet to facilitate communication over the virtual practicum Web page. Second, it used electronic mail to create space for the preservice teachers and elementary students to discuss text. And third the extension projects required the children to use word processing programs, graphics software, scanners, and digital cameras to develop coherent text responses. Each use of technology was new to the preservice teachers in this study. This was evident when they described their own school literacy experiences in class. None of them reported using technology in their own education until college when word processing was required.

As a whole project, 100% of the students agreed or strongly agreed on the survey that the literature-based Internet project they participated in throughout the semester was a good model of how the Internet could be integrated into literacy instruction. Responses highlighted how the model helped them as a learner. For instance, one student responded:

I think the [literature-based Internet project] increased our comprehension, fluency, writing, vocabulary, and technological skills. I think it helped with our comparing and contrasting skills, helped develop inquiry skills, and taught students to work collaboratively. It also helped [that] we got to do this with real kids and real teachers.

Most importantly, the virtual practicum prepared preservice teachers to develop their own ideas for integration. For example, the survey asked respondents to consider ways to use the extension projects posted on the Web site if they were a teacher. The preservice teachers were able to put themselves in the teacher position and imagine a variety of literacy activities such as the following:

- I would challenge my students to find their work on the Web page. Not only can they learn things by doing the activity and the reading, but they can also become more familiar with the Internet when given a safe page to [navigate on] like this one.
 - I would have [my] students compare and contrast their work with other participants' so they can see similarities and differences.
 - I would pair the key pals up with people from the same grade level. This way the students could practice writing on their level.
- Their ability to extend the model they participated in illustrated the transition they were making from learner to teacher.

How does a shared practicum experience allow preservice teachers to engage in class discussions and problem-solve issues confronted in their host classrooms?

One shortfall of most traditional practicum placements is that preservice teachers are sent to classrooms alone without the support of their peers (Korthagen & Kessels, 1999). While supervisors are assigned, they are not typically available to support the preservice teacher daily. The

virtual practicum, as designed in this study, placed all preservice teachers in two host classrooms. The instructor and the host teachers had working relationships and everyone was participating in the same activities. This common knowledge allowed for class discussions about general and specific practicum issues. Analysis of class field notes illustrated several examples of how preservice teachers were able to work through issues.

Dani was a non-traditional teacher education student who worked as an instructional assistant at a local elementary school. At the time of this study she was just beginning to learn how to navigate the Internet, but was comfortable conversing over e-mail with friends. As part of the virtual practicum, Dani was paired with a first grader named Steven. Her first e-mail message included an introduction and connections to the shared text. The message was five paragraphs long. Below is an excerpt:

I was the oldest child in my family and often wondered why my parents let [my sister] get away with so much mischief...She would always complain about not feeling well or some made up sob story. For a long time my parents fell for her little pity parties until they wised up one day.

The day Dani received Steven's reply she came to class frustrated. She shared Steven's response with her classmates:

Dear Dani: I like the book. I was on vacation when they read it so they told me what happened. The cooties part is fun. My brother is in third grade.
From, Steven

Dani was disappointed that Steven did not answer most of her questions and he did not pose any to her. A classmate asked Dani if she considered her audience before writing the letter. She stated, "I was more concerned with modeling good letter-writing skills than with the content." This was apparent when reading the entire message. It contained a salutation, five paragraphs, and a closing, just the way letters are taught to be written. Her comments that day began a grand conversation about the importance of considering audience and the difficulty of doing such when you communicate over the Internet.

Several other preservice teachers commented on the survey and in class about their difficulties communicating over e-mail. Michelle expressed on her survey, "This brought me down to Earth—I'm not used to corresponding with a first grader on a first grade level." Another student noted, "I enjoyed the experience and I learned that I needed to write in a simpler fashion so that my first graders could understand me."

Near the end of the virtual practicum, the preservice teachers were given time to review the extension activities posted on the Web site. This was done independently and then discussed in class. The survey asked the preservice teachers to rate the helpfulness of this component and 100% of the preservice teachers agreed or strongly agreed that it was helpful to their learning. Their explanations could be categorized into three areas. One area was the realization that the elementary students did not choose activities they thought would be most interesting. Cheryl commented on this stating:

We came up with so many ideas [for extension activities], but let's face it, the ones we thought were cool, the kids didn't. I think it was a super lesson on how differently the same things can be viewed by different ages and that's going to play a huge role in my classroom someday.

A second area was the opportunity to conceptualize how literacy skills progress through the grade levels. Linda wrote:

I think a lot of preservice teachers do not know what to expect from elementary age students,

especially in language arts, and it helps to view both upper and lower elementary school work to see exactly what children of these ages can complete and what they have difficulty [with].

The third area was the need for explicit, clear instructions. For example, once reviewing the elementary students' work, several preservice teachers saw a disconnect between their intention of the activity and the students' interpretation. Heather explained during an in-class discussion that she was disappointed in a first-grader's response to an activity her group developed. Initially she thought that the directions were clear, however, the first grade student who completed it had a much different way of responding. To make a point, Heather asked her classmates to complete the activity, which was to write an acrostic poem using a character's name from the text. The poem was to describe the character in words or phrases. She gave them 5 minutes to complete the activity and then asked for volunteers to share their work. Many of her classmates said they struggled with the activity, specifically thinking of creative words or phrases to represent the characters. Heather reflected on this event in her survey explaining:

Telling a child to write an acrostic poem is simple. However, after we tried to create our own acrostic poems, some of us found that it took longer than we expected. Some of us had a more difficult time than others. Even if it was easy for some of us to write a poem, it was helpful to see how some of our peers struggled with it. If some of us as adults struggled with it, how difficult the task must seem for a first grader! Writing the poems also required us to think in a different way, which allowed us to relate to how a first grader might view the writing activity.

The opportunity to discuss these types of issues with peers seemed to create a safe environment for the preservice teachers to share their successes and mistakes.

Discussion

The purpose of the virtual practicum placement in this study was to design an experience that would embed technology within the required content of a beginning literacy course and allow opportunities for students to learn from experienced teachers. Furthermore, the virtual practicum emphasized a *realistic approach* to teacher preparation (Korthagen & Kessels, 1999) by engaging preservice teachers in the same situation with the same elementary students and then providing time to discuss and reflect upon concerns and issues with their classmates. While this study represents an initial discussion of the virtual practicum, several principles stand out.

First, the virtual practicum relies on Internet access as all communication between preservice teachers and host classrooms takes place over e-mail or on the project Web site. Therefore, it is not bound by the university's geographical location. This enables instructors to identify exemplary host teachers; ones who can effectively model the concepts and content taught in class, without being bound to the local area. While this research examined the virtual practicum in literacy methods courses, it can be implemented in all content areas and for many different purposes. For example, preservice teachers attending a rural university can work closely with an urban elementary school. Or, as in the case of Schoorman's work (2002), preservice teachers enrolled in a multicultural education course can develop e-mail relationships with middle school students to "facilitate a deeper level of multicultural awareness and understanding than would have been possible without the project" (p. 364).

Second, this work suggests the virtual practicum created an experience where the preservice teachers' concentration was on the development and implementation of instruction. They were able to focus on the procedures, activities, and evaluation of their teaching without being overwhelmed by the daily management chores of the classroom like scheduling, attendance, and behavior issues. While the latter are critical factors and need to be acknowledged and learned, preservice teachers are typically constrained by these responsibilities during field placements and many times lose sight of their instructional responsibilities (Fuller, 1969; Moore, 2003). The virtual practicum allowed the preservice teachers to enter the culture of the classroom while maintaining their focus on instructional issues.

Third, unlike the traditional field experience, the university instructor played a critical role in the virtual practicum described in this study. I identified the host teachers, designed the steps of the practicum, which aligned with course goals, and allocated class time to discuss related issues. The combination of these factors made it possible to parallel course content with content taught during the practicum. This, in turn, created a cohesive methods course. Several researchers have argued for greater involvement of university instructors in the supervision of practicum students (Casey & Howson, 1993; Bullough & Gitlin, 1995). Beck and Kosnik (2002) believe such involvement to be an integral step of successful teacher preparation programs as it familiarizes faculty with classroom culture. Preservice teachers then benefit from instructors who can dialogue about specific situations. The virtual practicum necessitates heavy involvement of the university instructor in all aspects of its design and implementation.

Fourth, the virtual practicum provided the university students in this study an avenue for observing and participating in literacy activities. It was another step in examining the benefits technology brings to teacher education. Several scholars have already studied the effects listserv conversations and e-mail correspondences have on preservice teachers' knowledge (e.g., Trathen & Moorman, 2001; McKeon, 2001). Johnson (2005) has studied how exemplary teachers can be used as models to illustrate how naturally the Internet can be incorporated into elementary curriculum. The virtual practicum combines these methods and may have important implications for teacher education. Systematic research of how such an experience affects preservice education would be most beneficial.

Fifth, greater integration of the Internet in teacher education means higher levels of technology proficiency by instructors. Luckily federal grants such as the PT3 have made funds and expertise available to higher education institutes, creating technology preparation opportunities for faculty. Scholars, however, are only just beginning to examine teacher educators' perspectives of integrating technology into their literacy courses (Anderson, Moorman, Puckett, & Roehler, 2003). Just as the study described in this article investigates how best to prepare new teachers to use the Internet in instruction, similar research needs to be done to ensure our colleagues are given ample opportunities to learn new technologies and how to incorporate them into higher education.

Finally, perhaps one of the most perplexing questions in need of examination is when we should expect new teachers to begin infusing the Internet into their instruction. Students in this study voiced concern over using technology their first years of teaching as they needed to build confidence and get acclimated to their new environment. This is not a unique perspective. In fact, several research studies have argued that experienced teachers are more likely to use technology to support instruction rather than novices (Karchmer, 2001). However, would we be satisfied with a teacher who chose to wait a few years before she provided phonics instruction to her first graders? Probably not, but until administrators and educators become more invested in making technology a fundamental component of elementary education, teachers will have the luxury of deciding when they begin to use it with students. Further research exploring ways to seamlessly incorporate Internet integration

into teacher preparation will help new teachers build confidence and reach their comfort level sooner, allowing us to expect more technology use from first and second year teachers.

Conclusion

As a methods instructor, I recognize the benefits of traditional practicum placements as they expose preservice teachers to the inner-workings of the classroom culture by physically placing them in the school. Therefore, the virtual practicum should not be considered a replacement, but a compliment to the traditional approach to field placements. However, if we consider the two in tandem, perhaps preservice teachers will receive rich experiences that support the myriad of skills they are expected to learn.

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Appendix A: Virtual Practicum Evaluation

Using the scale below please rank and reflect upon each step of the virtual practicum. Also, please respond to the open-ended questions. Please include detailed comments.

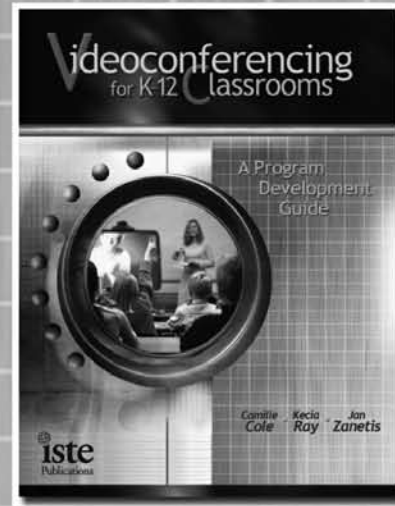
Circle the appropriate number.

1 = strongly disagree 2 = disagree 3 = agree 4 = strongly agree

1. The reading and literature discussion were informative
Please explain:
1 2 3 4
2. The email correspondence with my elementary key pal was a worthwhile experience.
Please explain:
1 2 3 4
3. I found it helpful to generate a list of extension projects related to text.
Please explain:
1 2 3 4
4. I found it helpful to view the elementary students' work on the Web site.
Please explain:
1 2 3 4
5. I found it helpful to discuss practicum issues and questions with my classmates.
Please explain:
1 2 3 4
6. I feel the virtual practicum provided an explicit model for how to integrate the Internet into literacy instruction.
Please explain:
1 2 3 4
7. Participating in a virtual practicum has motivated me to integrate the Internet into my own instruction.
Please explain:
1 2 3 4
9. Overall, I feel the virtual practicum was a worthwhile experience.
Please explain:
1 2 3 4
10. How do you feel about managing a collaborative Internet project in your future classroom?
11. What issues, if any, did you become aware of by participating in the virtual practicum?
12. If you were a teacher, how would you use the projects posted on the Web site with your students?
13. What differences do you see between the virtual practicum and the traditional practicum placement?
14. What, if anything, was your favorite part of this virtual practicum? Please be specific.
15. What, if anything, was your least favorite part of this virtual practicum? Please be specific.

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