

Successful Online Learning in Teacher Education:

What do Teachers and Students Need?

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INTRODUCTION

Online teaching and learning is exploding as an option in colleges and universities. This article reviews current literature about advantages of online learning, the needs of teachers and students involved in online teaching and learning, and a discussion of findings from personal interviews with participants currently engaged in online learning in teacher education.

Traditionally, teaching has been a face-to-face experience. The interaction between the teacher and the student(s) and among student participants plays a strong role in shaping the learning experience of those participants. With the increasing frequency of course delivery through online and hybrid means (*hybrid* refers to those courses that combine face-to-face meetings with an online component) much of the face-to-face interaction is lost. This loss is of great concern for those of us in teacher education. Therefore, we asked the following question: What do teachers and students need to be successful in online teaching and learning?

Online courses are those that are offered partially or entirely over the Internet through the World Wide Web. Many issues connected to online learning are explored in current literature, including: learning through online courses; converting existing courses to an online format; developing new courses to be taught exclusively online; teaching hybrid courses; administering entire programs of study online; familiarizing oneself with the technical knowledge necessary to teach or learn in an online course; utilizing effective online teaching pedagogy; and incorporating effective assessment strategies for both students and

programs in an online delivery format. (Boaz, Elliott, Foshee, Hardy, Harmon, & Olcott, 1999; Bothel, 2002; Gilbert, 2001; Johnson & DeSpain, 2001; Jones & Harmon, 2002; Ko & Rossen, 2001; Lau, 2000; Law, Hawkes, & Murphy, 2002; Lewis, 2000; Priest, 2000; Schrum, 2000; Stephenson, 2002; Tiene, 2000; White & Weight, 2000; and Youngblood, Trede, & DiCorpo, 2001).

Because of the nature of teaching, professors are necessarily interested in both teaching effectively *and* the issues related to successful student learning in an online delivery format. For these reasons, the review of literature will focus on the advantages of online teaching and learning, the needs of teachers, and the needs of students in order for both groups to have a successful online learning experience.

Advantages of Online Learning

There exists a growing audience of learners who are interested in furthering their education but who, for a variety of reasons, cannot enroll as full time students in a traditional university setting (Leonard & Guha, 2001; Noah, 2001; Schrum, 2000). These individuals are often nontraditional students who work full time, have family obligations, and/or live a considerable distance from college campuses. According to Leonard and Guha (2001), commuting issues, conflicting time schedules, and family obligations pose major barriers to nontraditional students interested in attending regular classes. “Online programs have the potential to increase the access to and availability of educational opportunities for students who require flexibility within their schedules” (Champion, Cole, Gillett, Kingsbury, & Munski, 2003, p. 6).

For students, online learning is initially appealing for two reasons: flexibility and convenience (Noah, 2001; Schrum, 2000). First, online courses provide students the opportunity to learn within a flexible schedule. They do not have to attend class every Tuesday and Thursday from nine o'clock to ten-thirty in the morning. Instead, students can log on and attend class at times when it fits into their schedules, even if that is at one o'clock in the morning. Second, online learning is convenient because it overcomes considerable geographic distance for those students who would have to travel many miles to attend classes on campus. This is also an advantage for universities—online course delivery allows them to reach a greater audience of students than just those who attend traditionally delivered courses.

Aside from issues of flexibility and convenience, students often discover that online learning has other advantages as well. These include:

- multiple and collaborative participation among widely dispersed individuals,
- interaction with and among individuals from diverse cultures, and
- the ability to focus on participants' ideas, without knowledge of age, race, gender, or background (Schrum, 2000, p. 93).

Another advantage of online learning relates to the effectiveness of class discussions (Ko & Rossen, 2001; Lau, 2000; Stephenson, 2002; Tiene, 2000; White & Weight, 2000; and Youngblood, Trede, & DiCorpo, 2001). Much of the communication in online courses is asynchronous. That is, participants often do not write or speak with each other in real-time. Rather, they read others'

comments when they log on to attend class, offer their own input in writing and wait for responses to their contributions. In many online learning experiences participants read and react on their own schedule. Interestingly, this delayed communication is often viewed as a strength of online learning.

Tiene (2000) conducted a survey of graduate students involved in online discussions. Survey results indicated positive reactions to most aspects of the online discussion experience, “even those elements that clearly differ from the face-to-face experience” (Tiene, 2000, p. 371). Students in his survey overwhelmingly indicated that they appreciated the convenience and time that the asynchronous nature of the discussions afforded. Students were able to read the comments of others when it was convenient for them and “nearly unanimously agreed that having time to think about how to respond to other students’ comments was a positive feature” of the online discussion experience (Tiene, 2000, p. 378). There was no indication that the asynchronicity inhibited the discussions by making them seem disjointed or lacking spontaneity.

Teine reported that students also appreciated the written nature of online discussions. In fact, “every respondent agreed that a written record of the class comments was helpful to have, and nearly everyone indicated that they re-read some listserv contributions for review and reflection” (Tiene, 2000, p. 382-383). Students noted that in using written instead of verbal communication, they were able to more carefully and thoughtfully articulate their ideas than if they had been speaking face-to-face. Clearly, when discussions are facilitated well in the online setting, they can be highly advantageous to the learning of class participants.

Gilbert (2001) asserts that the online learning experience can be more stimulating overall than the learning experience in the traditional classroom setting. “The online environment requires the learner to be actively involved in his or her own learning and provides both a series of choices to make and an immediate response to each action, so participation demands more, engages more, and empowers more than the traditional approaches” (Gilbert, 2001, p. 71).

The literature makes it clear that the advantages of online learning to those with busy lives and full schedules can be abundant:

For learners who are highly motivated, well organized, comfortable in the electronic environment, able to advocate for themselves, and able to adapt to the social structure of the virtual classroom, distance learning is a boon. What other way might a student take instruction from an outstanding teacher at midnight, in the comfort of her pajamas, and curled up in an old armchair? (Noah, 2001, p. 32).

Teacher Needs

Teachers have several needs that must be met in order to have a successful online teaching experience. These include: course transformation, time, technical support, and issues regarding teaching style, learning environment, and communication.

First, teachers need to understand that very rarely is it successful to simply convert an existing course “as-is” to an online format. One is certainly able to teach an existing course either “on the ground” (Ko & Rossen, 2001,

p.12) or online, but the way the course plays out—the kinds of projects one asks students to accomplish, the way in which participants engage with each other, the way one assesses student work—differs from what would occur in a traditional classroom setting. Having said that, Ko and Rossen (2001) also emphasize that the initial process of traditional course development—setting course goals, outlining objectives, determining required tasks, and creating meaningful assignments—is the same for an online course. It is in the phase of course design—how a teacher plans for interactions, lectures, conversations, and assessment to occur—that the path diverges in a different direction. This is the area where teachers new to online teaching need the most guidance.

When teachers are at the point where they are ready to design their online course environment, the first and most important need to be met is time. Teachers need time to read; time to meet with instructional technology staff; time to become familiar with the technology options available at their institutions; time to experiment with the technology itself; and time to actually set up the environment of their virtual classrooms.

Like anything else, doing something this complex for the first time takes a great deal more time, effort, and mental energy for the novice than for the experienced online teacher. Therefore, another need of online teachers is to have excellent technical support (Boaz, Elliott, Foshee, Hardy, Jarmon, & Olcott, 1999; Ko & Rossen, 2001; Lau, 2000; Stephenson, 2002; and White & Weight, 2000). Teachers of online courses will be much more successful if they have ready access to highly knowledgeable faculty and staff who can guide them

through the process of course design and implementation, as well as provide ongoing technical suggestions and support.

Once teachers have established their courses and begin teaching students online a whole new set of challenges arises. These challenges can be grouped under the umbrella of “communication issues.” Whereas in the traditional classroom teachers can use their physical presence to facilitate communication through voice, body language, intonation, expressions, and gestures, in the online classroom everyone must rely on written text to communicate (Boaz, Elliott, Foshee, Hardy, Jarmon, & Olcott, 1999; Ko & Rossen, 2001; Lewis, 2000; Priest, 2000; Schrum, 2000). Ko and Rossen (2001) clarify the issue well:

This fact puts an inordinate emphasis on style, attitude, and intonation as they are expressed in print. A sarcastic aside, a seemingly innocent joke, shorn of an apologetic smile or a moderating laugh, can seem cold and hostile to the student reading it on the screen. None of the conventional ways of modifying ambiguous or ironic statements—the wink, the raised eyebrow, the shrug, and the smile—are available online. Thus an instructor must pay particular attention to nuances (Ko & Rossen, 2001, p. 13).

Teachers need to create an effective learning environment in the virtual classroom. One element of this is overcoming the lack of physical proximity and therefore the resulting lack of nonverbal communication cues. Purcell-Robertson and Purcell (2000) cite many who believe that the way to combat this feeling of

being disconnected is to establish a learner-centered environment. “In a learner-centered environment, the instructor is not the ‘star’ or the ‘sage on the stage.’ In the learner-centered environment the instructor becomes the ‘guide on the side’” (Repman & Logan, 1996, p.36, as cited in Purcell-Robertson & Purcell, 2000, p. 17). Wolcott (1996) as cited in Purcell-Robertson & Purcell, asserts that the learner-centered teacher “emphasizes facilitation of learning over transmission of information” (Purcell-Robertson & Purcell, 2000, p. 17).

How, then, do teachers create a learner-centered environment in an online course? The first suggestion for teachers is to welcome students to the course. Purcell-Robertson and Purcell (2000) recommend that both teacher and students post biographies in an effort to build familiarity and rapport among course participants. Ko and Rossen (2001) suggest that teachers find out whether or not their institutions have devised a student orientation program that will help students take care of majors issues such as:

- equipment and browser requirements;
- a general introduction to the software platform and its major features;
- instructions and links for downloading necessary software plug-ins, and
- information about issues that arise in an online class—perhaps in the form of a checklist about what one can expect as an online student (Ko & Rossen, 2001, p. 197-198).

Even if institutions do have an orientation program to help students address the basic issues of online course participation, Ko and Rossen (2001) also suggest that teachers prepare their own orientation programs for each online course. These orientation programs may include an introduction to the course, the teacher's expectations for online students, and a first assignment that requires students to demonstrate some familiarity with the software being used, such as posting a biographical introduction or taking an orientation quiz.

The second recommendation for establishing a learner-centered environment is central to courses taught in any venue of higher education, and that is distributing a syllabus. Priest (2000) emphasizes that the written word is the primary means of virtually all communication between teachers and students in an online setting; therefore, teachers must strive to use words effectively.

Based on her extensive experience as an online learner, she recommends that

when an online syllabus is prepared, it should be particularly clear and detailed....Syllabi should contain a full description of what is expected [of students]....The clearer the syllabus, the less likely online instructors will have students coming back and saying, 'Oh, I thought you meant...'

(Priest, 2000, p. 43).

In addition to distributing a clear, detailed syllabus, Ko and Rossen (2001) recommend that online teachers create a FAQs (Frequently Asked Questions) page in their online classrooms. They believe that this is an appropriate area to outline specific procedures regarding computer or program operations required to complete assignments. They suggest that teachers list each procedure students

might encounter when working on assignments and provide a short explanation of what they need to know to complete it.

A third essential element to creating a learner-centered environment is providing consistent feedback throughout the course. A lack of immediate feedback is extremely frustrating for online students and can impede progress. Purcell-Robertson and Purcell (2000) state, “The student who doesn’t receive a timely response to their comments may feel as though they are crying out in a wasteland and no one cares” (p. 18). Online teachers cannot—and should not—be accessible twenty-four hours a day. Therefore, they must establish clear procedures for communicating with students. Purcell-Robertson and Purcell (2000), note that the University of Phoenix Online values prompt, focused feedback so highly that it includes feedback requirements in the faculty contract. Faculty at UPO will:

- respond to students’ questions within 24 hours from the time received, and
- return all student assignments bearing a grade and comments within one week from the date the assignments are received (p. 19).

Regardless of the personal guidelines teachers follow, it is critical that they clearly communicate their feedback procedures to students. Feedback includes everything from replying to personal messages, giving responses to common questions, and commenting on discussion threads to grading and returning assignments. According to Lewis (2000), sharing your feedback policy with

students “reduces anxiety and creates an expectation on the part of students of when they should hear back from you” (p. 19). Interestingly, he notes that instructors who follow a regular schedule of providing students with feedback—“for example, by noon every Saturday—tend to get better student evaluations than do those who get feedback to students more quickly, but who are also inconsistent, getting papers back sometimes the next day, sometimes three days later” (Lewis, 2000, p. 19). Similarly, Purcell-Robertson and Purcell (2000) recommend eliciting feedback from students on a regular basis throughout the course as well as requesting that students complete an end-of-course survey.

A final aspect of fostering a learner-centered environment is utilizing effective online communication techniques. Lewis (2000) asserts that there is a WRITE way to communicate online. “The WRITE way involves communicating online in a manner that is (W)arm, (R)esponsive, (I)nquisitive, (T)entative, and (E)mpathetic” (Lewis, 2000, p. 17). Each of these elements is outlined in great detail in his chapter *Taming the lions and tigers and bears: The WRITE WAY to communicate* (as cited in White & Weight, 2000). In short, Lewis reminds readers that the nonverbal cues that clarify messages in a face-to-face setting are absent in the online classroom. Because of this, it is extremely important for online teachers to write in ways that embed some of those human characteristics into their text.

Online teachers must also facilitate frequent, meaningful student-to-student interaction in order to foster effective communication. This supports the social context for learning that students consider so important. Much student-to-

student interaction occurs during asynchronous discussions. Ko and Rossen (2001) offer seven tips for fostering asynchronous discussion:

1. Start the major topic threads yourself.
2. Narrow down topics.
3. Organize forums and threads to reflect the class chronology or sequence.
4. Key the thread topics to appropriate activities.
5. Establish a pattern of frequent response.
6. Facilitate and build on participation.
7. Be aware of cultural patterns as well as differences in personal styles of communication (p. 224-228).

Youngblood, Trede, and Di Corpo (2001) conducted a study to clarify the role of the facilitator in the online learning environment and to identify other factors that support or inhibit online learning. Within their study, Youngblood, Trede, and Di Corpo surveyed students, asking them to rate twelve facilitator tasks for their importance relative to the online learning experience. Students' responses indicated that they believed the six most important tasks facilitators should perform in order to ensure a successful online learning experience were to:

- clarify grading of the online part (87%),
- clarify expectations (86%),
- use questions for discussion (80%),
- monitor participation (80%),
- build on others' comments (78%), and

- move discussion forward (77%)” (Youngblood, Trede & Di Corpo, 2001, p. 269).

Clearly, students themselves value teachers’ abilities to facilitate effective communication in an online environment.

Student Needs

What does it take to be a successful student in an online course? In this delivery format, both technical needs and personal traits are required for students to have a successful distance learning experience (Gilbert, 2001; Lim, 2001; Noah, 2001; Priest, 2000; and Schrum, 2000). These include: equipment and software needs, technical support, comfort using technology, motivation, time, patience, self-advocacy, and strong reading and writing skills.

At the most basic level, learners need reliable equipment. Students need ready access to a computer as well as the necessary software to complete the course. Another essential factor is fast access to the Internet. Ideally, all students would have a high-speed Internet connection. Those who are working with a dial-up modem can often find themselves frustrated by an overall slow connection, which can become an even greater challenge if students try to access web-based course information during peak user times. A low connection speed compounded by heavy Internet traffic can create a major obstacle for online learners.

There are other connectivity issues to consider as well. Students working from a server that employs a firewall or filter software face additional access issues if these features prevent access to applications or sites necessary to the

course. For example, it is possible for a server to deny users access to chat rooms. If an application such as a chat room is central to course delivery, firewalls or filters can impede students' completion of a course.

Online learners also need easy access to good technical support (Gilbert, 2001; Ko & Rossen, 2001; and Noah, 2001). Students who encounter problems should be able to contact a support person who can provide timely and reliable assistance.

The last technical need serves as a segue between the technical needs and personal traits of successful online learners. Students taking online courses must be familiar with Web browsers, e-mail, and basic software installation procedures (which may or may not require downloading). In other words, online learners must have what Lim (2001) refers to as computer self-efficacy: "one's belief in [his or her own] ability to use computers and to learn new computer skills" (Lim, 2001, p. 43). Computer self-efficacy can be considered both a technical need and a necessary personal trait for successful online learners. Students who feel confident—or at least comfortable—with their knowledge of and ability to use computers and Internet technology are more likely to be successful with online learning than those who are anxious about or unsure of their use of technology.

Once the above technical requirements are in place, students must consider who they are as learners. There are several personal traits that can influence whether students will be successful in an online learning environment (Gilbert, 2001; Lim, 2001; Noah, 2001; Priest, 2000; and Schrum, 2000). The

first is high motivation. Students who are highly motivated to take courses in this format are likely to complete coursework even without the structure of a traditional class. Noah (2001) cautions that students who lack incentive to complete a course often find it easy to postpone work.

A second important trait of successful online learners is a commitment to spending an equal or greater amount of time on an online course compared to the time they would spend on a course in the traditional setting. Those who consider taking an online course because they think it will be easier, i.e., less work, than taking a traditional course should be discouraged from enrolling. Other factors such as flexible scheduling and the ability to determine one's own pace might make an online learning course appealing—and by extension easier for students to complete—but the idea that there will be less work involved is a myth.

Online learners must also possess patience while waiting for feedback from the instructor and classmates. Because questions, concerns, and even assignments are communicated in writing via E-mail or in electronic discussion areas, it often takes longer for the instructor to respond than it would if these same communications occurred face-to-face. Therefore, tolerance for this delay is an important trait for online students to possess.

Another characteristic that is related to this written versus face-to-face mode of communication is a willingness to self-advocate. Students who are confused about an assignment must be willing to speak up and ask for clarification. An instructor is not able to look across the room to see whether his

or her students appear confused or apprehensive about an assignment or topic, so online students' willingness to ask for help is even more important for success than it is in a traditional setting.

Finally, and arguably one of the most important traits, students in online courses must have good reading and writing skills. Although many instructors build in opportunities for “real-time” communication via chat, most of the learning of new material as well as the communication about course concepts is accomplished by engaging with written text. Students who learn effectively through reading and writing are more likely to experience success in an online course. Conversely, “a person who is uncomfortable reading, writing, and keyboarding is likely to encounter some frustrations with online coursework” (Noah, 2001, p. 32).

Students need to possess a wide range of technical and personal traits in order to succeed in an online learning course or program. Taken together, these student needs reflect an assertion made by Priest:

How well online learners learn depends, to a great extent, on their temperaments, circumstances, needs, tastes, and ambitions. Success in learning depends not so much on the subject itself (or maybe even on the medium) as on the learner's own engagement (Priest, 2000, p. 41).

METHODS

The literature about online teaching and learning affirms that there is a place for this method of instruction in higher education. Based on our review of literature about the advantages of online learning, and the needs of teachers and

students in online teaching and learning, we interviewed teachers and students involved in online teaching and learning in teacher education. As teacher educators, we were interested to see whether the online experiences of teachers and students in teacher education programs mirrored or differed from the findings within the literature about online teaching learning in general. Each investigator contacted four different teachers and four different students involved in online teacher education at three upper midwest, four-year universities. Of those contacted, seven teachers and three students were willing and had the time to participate. We asked each participant three questions. All three questions were open-ended in nature. The first two questions were designed based on the themes that arose from the review of literature. The third question was more general and designed to capture any new ideas not addressed in the literature. We asked all participants the same questions:

1. What are the three most important things teachers need to be successful in teaching online?
2. What are the three most important things students need to be successful in learning online?
3. Is there anything else you would like to tell me about online teaching and learning?

What follows is a discussion of the respondents' insights about online teaching and learning within the context of teacher education programs.

Findings of Teacher Needs

The first question in our interviews was “What are the three most important things teachers need to be successful in teaching online?” Each investigator independently analyzed and coded all responses. Then, through a process of consensus, responses were recoded and nine different categories emerged. The most common responses addressed the teacher’s ability to transform course content for online delivery and the technical skills needed to do so. The second most common response addressed attitudes toward online teaching and learning and the importance of being organized. Expertise in content area and the need for technical support emerged third, along with issues of teaching style and time. Active participation was mentioned as well. Table 1 shows the number of responses both teachers and students gave to address what teachers need to be successful in online teaching.

TABLE 1: What do teachers need?

Total N=10	Teacher n=7	Student n=3	Response Category	Teachers Need:
8	7	1	Course transformation	to be able to transform course content using effective online teaching pedagogy
7	4	3	Technical Skills	to effectively use course delivery system and help students with technology issues
6	6	0	Attitudes	to possess a positive attitude towards online teaching
5	2	3	Organization	to have materials organized well in advance and have a clear vision for the structure of the course
4	3	1	Expertise in Content Area	to possess expertise in field of study
4	3	1	Technical Support	assistance in learning and using online teaching technology
3	3	0	Time	time to prepare initially as well as to conduct the course
3	3	0	Style Issues	to have a clear teaching philosophy, yet be able to adjust their self-image and practices
2	1	1	Active participant	to participate in online discussions,

				respond to students, and return assignments quickly
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By far the most common response to the question of what teachers need to be successful in teaching online was the ability to transform course content using effective online teaching pedagogy. This need has been extensively addressed in current literature (Boaz, Elliott, Foshee, Hardy, Jarmon, & Olcott, 1999; Ko, & Rossen, 2001; White & Weight (Ed.), 2000; Lau (Ed.), 2000; Stephenson, J. (Ed.), 2002; and Youngblood, Trede, & Di Corpo, 2001). All teachers interviewed addressed this need in their responses. “You can’t just take a traditional course and put it online,” said one teacher. “You really have to have a clear understanding of the goals of the course in order to figure out how to meet those goals through a variety of online methods,” said another. One teacher said, “You need to be creative to know how to put the right type of challenge into an online assignment. You really have to figure out how to make the course ‘come alive.’” Finally, one student said, “Teachers need to have the ability to engage the learners online.” The ability to transform courses for online delivery while maintaining quality teaching and learning seems to be the chief need of teachers in order to have a successful online teaching experience.

Technical skills were the next most identified need for teachers. Both teachers and students thought this was important. One teacher stated, “Teachers have to possess the technological skills necessary to make online learning about the subject matter content rather than technology. They must be proficient in some course delivery system like Web CT, Blackboard or Desire-to-Learn.” In other words, teachers must possess enough technical savvy so that

they can develop and design a course for students where the focus remains on content. If the teacher is not well-versed in the technology necessary to deliver the course, then technical issues will likely become the greater focus of everyone's time and impede student learning of content material.

Another teacher said, "Teachers need to be comfortable with the technology platform they will be using." One student responded, "Online teachers need to be computer literate. They need to be proficient in order to support novice students who are having difficulty learning the technological process (of the course)." Clearly, possessing sufficient technical skills to deliver a course as well as to assist students in navigating the online class are important.

Attitudes toward online teaching emerged as one of the most common responses that teachers provided, although this was not mentioned by students. "Teachers have to believe that online learning is a viable alternative to traditional educational experiences," one teacher stated. Another said, "Teaching online cannot be something that is imposed on you. It has to be something you feel confident in." "An instructor needs to be open to trying something different and willing to take a risk with online teaching because it is so different than traditional teaching," said another teacher. Recognizing online teaching and learning as valuable seems to be as important as other attitude traits such as patience and flexibility, which were also identified by teachers interviewed.

Both teachers and students mentioned expertise in content area as a need of teachers. "Your knowledge base and expertise is your most valued

resource when teaching online,” asserted one teacher. “An instructor really needs to be knowledgeable about their discipline in order to share their knowledge with students,” said another. One student stated, “Teachers really need to grasp the purpose of the course and the content that comprises it.” Just as in the traditional classroom, expertise in your field is a key ingredient to successful teaching.

Both teachers and students mentioned organization as well. “Teachers need strong organizational skills. All materials including websites, articles, and software need to be ready to go from the beginning of the course,” noted one teacher. “Courses must be designed so that it is easy for students to see its structure and navigate through pages easily,” said another teacher. “Teachers need to be highly structured and organized,” said one student. Another student offered, “Teachers need to be very organized. They need to keep continuity of thought and process throughout the course.” “Teachers need to be very clear and precise about their expectations as well as with assignment instructions,” said another student. Organization is an essential piece to successful online teaching.

Technical support is another item mentioned by both teachers and students. “A teacher needs substantial training before, during and after implementation of the technology. He or she will need ongoing support for curriculum improvement relative to translating course content into the various media for the technology,” said one teacher. A student said, “Teachers need to have access to the people who understand the technology aspect of the course.”

One teacher clearly stated the importance of technical support in this statement, “Online delivery of courses would not even be possible without good technical support.”

It takes a tremendous amount of time to prepare a course to teach online (Boaz, Elliott, Foshee, Hardy, Jarmon, & Olcott, 1999; Ko, & Rossen, 2001; White & Weight (Ed.), 2000; Lau (Ed.), 2000; Stephenson, J. (Ed.), 2002; and Youngblood, Trede, & Di Corpo, 2001). Three of the teachers interviewed discussed the time needed not only to prepare the course, but also to teach it. “It takes a tremendous amount of time to convert content into an online format,” said one. “You have to devote a lot of time to it (online teaching). At least double the amount of time a traditional course takes. I tried to set aside large blocks of time to do it, like each Sunday afternoon,” said another. “For the first few times you are teaching online it takes much more time than a traditional class, both in preparation and in evaluating student assignments.” Interestingly, according to Johnson and DeSpain (2001), sixty-five percent of schools do not currently provide release time to faculty for development and delivery of online courses. Although not an issue acknowledged by the students interviewed, a great deal of time is required—during all phases of course development, design, and implementation—for teachers to successfully deliver an online course.

Three teachers also brought up issues of teaching style. “You really have to take a different approach to teaching. This may be hard, especially if you have already established your own teaching style. You have to reconsider the image you have of yourself and your own strengths. You have to rethink your identity

as a teacher,” said one teacher. Another offered, “It has been really hard for me to find a way to have online teaching fit my own teaching philosophy. I am a social constructivist, yet when I teach online, I kind of feel like the disembodied head from the Wizard of Oz. I want students to see I’m a person and I want to get to know them.” “Everything about your teaching has to be different,” summed up another teacher. This process of rethinking your identity as a teacher seems to be an issue not well addressed in current literature and should be explored further.

The last category of teacher needs that emerged through these interviews was the need for the teacher to be an active participant in the course being taught online. One student said, “Some teachers don’t understand that they need to communicate with us daily. Some teachers just sit back on the edges of the course and leave everything up to the students. Teachers really need to be active in the course online with us.” A teacher echoed this sentiment, “Teachers need to be present – participate in the discussions, grade assignments and test quickly, and respond to student inquiries. Students need to know they are not out there alone.” Interestingly, both of these responses—representing the opinions of a student and a teacher—came from participants in a completely online K-8 teacher education program. It seems that new needs may emerge when entire programs go online versus individual courses. This is an area that needs to be looked at more closely as online teaching and learning in pre-service teacher education continues to evolve.

Findings of Student Needs

The second question in our interviews was “What are the three most important things students need to be successful in learning online?” Nine response categories emerged from the interviews. Motivation was mentioned more frequently than any other response category. The next most frequently identified need was comfort with computers. Being an organized, independent learner as well as being a risk taker were the next most frequently mentioned needs. Technical support, mentioned entirely by teachers, and good reading and writing skills, mentioned entirely by students, surfaced next in our interview findings. Patience and flexibility, time, and active student participation were all needs addressed twice throughout our interviews. Table 2 outlines the categories made by both teachers and students in response to the question, “What do students need to be successful in online learning?”

TABLE 2: What do students need?

Total N=10	Teacher n=7	Student n=3	Response Category	Students Need:
7	5	2	Motivation	to take initiative and have follow through and commitment
6	4	2	Comfort with Computers	to have basic computer skills and be willing to use technology
4	3	1	Organized, Independent Learners	the ability to manage time, materials, and learning
4	3	1	Risk Taking	a willingness to work with technology, especially if not already comfortable with it
3	3	0	Technical Support	training and support in using hardware and software
3	0	3	Good Reading and Writing Skills	to be able to communicate in an online environment via written text
2	2	0	Patience and Flexibility	the ability to cope with wait time and technology glitches

2	1	1	Time	to prepare for class and engage in course content
2	1	1	Active Participation	to be prepared for class and actively engaged in the course

Motivation was the most frequently identified need discussed by those interviewed. Both teachers and students identified it as a high priority. One teacher related, “Students need to take the initiative to follow up on readings and links and apply their learning.”

Being comfortable using computers, the next most frequent response, was also mentioned by both teachers and students. One teacher said, “Students need to be technologically astute enough to be able to use technology tools to relate to others in the course.” Students addressed the need to have a comfort level with computers so that anxiety over using computers would not interfere with learning. One student commented on the aspects of accessing the course itself by saying, “Keyboarding, chatting, and processing all involve multitasking at a level I had never done before.”

Another category identified by both students and teachers was being an organized, independent learner. One student noted, “You have to be very organized and cannot procrastinate. You really have to keep at it to stay on top of things! Some classes have a wide open structure, so if you put things off, you really get in trouble at the end of the semester.”

Risk taking was identified by both students and teachers as a quality needed for success in online learning. Although we did not encounter in the literature a definition of risk taking as it relates to online learning, it emerged from

the interview comments as a willingness to learn and use the technology necessary to access and participate in online courses. One student related her struggles in the following manner:

You have to be a risk taker. You only learn how to access an online course by doing. To be perfectly honest, I was scared to take an online course because of accessing and doing a chat room. Getting needed information from computers was almost a barrier I had to overcome. I never did get over it, but as I became more comfortable in the actual access of the course, my anxiety reduced allowing me to learn course content.

Another issue that emerged from our interviews was students' need for technical support. It is interesting to note that only teachers mentioned this as a need of students. One teacher stated, "A distance delivery system is not possible without technical support." Another teacher commented, "Training is crucial before, during, and after the first experience of being a Blackboard user. Students would benefit from having technicians on call 'twenty-four/seven'."

Good reading and writing skills were identified as a need by all three students interviewed. Interestingly, no teachers interviewed mentioned this as a student need. In reflecting on this, students are the central participants of online discussions, and as such would recognize the importance of good reading and writing skills. One student said, "Because all of our discussions are online, we have to be good at getting our point across. We have to be good at communicating over a computer in writing."

Two teachers named patience and flexibility as important needs of students involved in online learning. In responding to the interview question, one teacher stated, "Patience, patience, and more patience." Another teacher pointed out that students need to be able to deal with technological glitches and the wait time associated with the often asynchronous nature of online learning.

Time was addressed as student need in our interviews by one teacher and one student. One teacher said, "Students need to create a schedule for on-line study. One of the greatest advantages of on-line learning is that the schedule can be flexible; however, time must be set aside to work on the course." One student stated, "You cannot procrastinate! You really have to keep at it to stay on top of things!"

One teacher and one student also indicated being an active participant as a student need. The teacher stated, "Students need to be active participants in the course. They need to participate in discussions, presentations, and online chats. They need to ask questions if they are uncertain."

These responses to our interview question about what students need to be successful in learning online closely match what the literature says about the technical needs and personal traits that promote student success in online learning (Gilbert, 2001; Lim, 2001; Noah, 2001; Priest, 2000; and Schrum, 2000).

One teacher identified a need that we did not encounter in the literature: the student's level of maturity. This is an intriguing notion, especially considering the broad range of online education that is occurring with students from elementary levels to post-doctoral learners. The teacher stated that more mature

students provide higher quality contributions to the course due to their experience. She spoke of younger students being quick to access material through technology, but older students sharing more valuable content in discussions. Examining the needs of students engaged in online learning through a developmental context is an interesting idea that deserves further study.

CONCLUSION AND IMPLICATIONS FOR FURTHER RESEARCH

The findings from the interviews with the teachers and students in teacher education aligned closely with what current literature says about what teachers and students in general need in order to be successful in online learning. What did not emerge from our review of literature is information about needs of participants specifically in online teacher education as opposed to general online learning.

Comments from one of those students interviewed indicate that for teacher education programs that are entirely online, the role of the mentor teacher is quite important. This also leads us to think more deeply about whether teacher and student needs in online teaching and learning differ based on whether the experience is with an online course versus an online program.

After reflecting on our exploration of this topic, we see five issues that merit further research:

- Are there any differences in the needs of participants in online *teacher education* versus the needs of participants in online learning in general?
- Within the field of teacher education, do the needs of participants differ based on whether their experience is with an online course versus an entire program that is online?
- What is the role of the mentor teacher when teacher educators attempt to prepare pre-service teachers within the framework of a teacher education program that is delivered entirely online?

- What can be done to ensure that teachers have the time, resources, and support necessary for implementing quality online teaching?
- Are there developmental phases that students go through when they are involved in online learning? How does the student's maturity level impact success in this learning environment?

When these questions can be answered and when the conditions for optimal online teaching and learning as presented in the review of literature can be met, we believe that a quality teaching and learning experience is likely to occur. Participants in online learning would be wise to acknowledge the insight of Priest (2000):

Online education is still about dealing with people, and effective online instructors need the skills to do so. They need to be able to communicate and write clearly. In the end, the challenge of online education remains the same for online instructors as teaching remains for all teachers—to share their knowledge, time, and hearts with students (p. 44).

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