

## **Web-based Communication Tools in Support of a Distributed Community of Practice**

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### **Abstract**

*This case study investigated adult students during their first semester in a distance delivered doctoral program. The purpose was to examine the use of web-based communication tools and their ability to establish a community of practice enabling the new students to share solutions related to distance doctoral study. Data collection methods included a semi-structured telephone interview and postings on a Wiki (editable web page). This study found that (a) a variety of web-based tools enabled the students to connect with their cohort on a routine basis, (b) it was possible to establish an embryonic community of practice, (c) students were able to assist each other with concerns that helped them acclimate to learning online and their doctoral program, (d) use of web-based communication tools are vital as they assist in the student's learning, (e) three students felt isolated from their cohort until they participated in a group project even though they had the use of web-based communication tools at their disposal. The results of this study suggest that opportunities for students to engage socially with their peers should be built into the design of online classes and degree programs.*

### **Introduction/Theoretical Framework**

Online learning has been highlighted as a delivery system for distance learning in higher education as it can provide students who are dispersed across the nation with a wealth of interaction and rich learning experiences (Reiser, 2002). The discipline of Agricultural Education is offering classes and complete degree programs via online learning (Dooley, Kelsey, & Lindner, 2003; Miller & Miller, 2005). Interaction and dialog are fundamental for productive learning, in person or online (Cohen, 1994; Qin, Johnson, & Johnson, 1995; Roschelle, 1992; Slavin, 1994). Reisetter and Boris (2004) documented that students highly value virtual teacher availability and peer chats. Rovai and Wighting (2005) report learning occurs most effectively when there is a strong sense of community among the learners. Creative use of communication technologies can enhance the quality of online learning by providing opportunities for student networking. In an online learning environment, student networking must occur while students are in different locations. Distance students do not have the same opportunity as on-campus students for informal communication with their peers (Miller, Murphrey, & Edgar, 2006).

Using a variety of media to deliver instructional content and to facilitate communication enhances learning (Cain, Marrara, Pitre, & Armour, 2003). In fact, one study documented that the greater the number of communication channels available for students to interact (network), the more positive students were about their online learning experience (Williams, Nicholas, & Gunter, 2005).

Previous research suggests that communities of practice among face-to-face learners are beneficial as they provide interaction and dialog between experienced members and newcomers (Wenger, 1998b). That communication not only promotes the relaying of knowledge, it also promotes the cultivation of new knowledge and understanding (Gray, 2004). Community knowledge is an important part of a community of practice, which means that the sum of community knowledge is greater than the sum of the knowledge of individual participants (Gherardi & Nicolini, 2000). Originally, the idea of communities of practice applied to groups of people that interacted in face-to-face settings (Lave & Wenger, 1991). Johnson (2001) asked if current technology can be used to support the collaboration needed to establish a distributed or virtual community of practice applicable to online learning.

The theoretical framework for this study is based on constructivism (Piaget, 1973). The learning theories of Dewey (1938), Piaget (1973), Vygotsky (1978), and Bruner (1996) propose learners will gain new knowledge based on existing experiences and knowledge. Vygotsky (1978) stressed that learning is dependent on the social context in which learning occurs. His theory called social constructivism stresses the worth of interaction with people other than the instructor, i.e. other students.

The theoretical construct of communities of practice is based on the anthropological perspective that explores how adults learn through common everyday social practices. Wenger (n.d.) defined a community of practice as “a group of people who share an interest in a domain of human endeavor and engage in a process of collective learning that creates bonds between them” (p. 1). Communities of practice, self-organizing systems of informal learning, are different from other communities in three main ways. First, is a focus on the domain of mutual interest, as members are distinguished from other people due to their level of proficiency and knowledge. Second, members engage in joint activities and discussions. They help each other and share information as the group interacts and learns together. It is through these interactions that the group builds community, fostering relationships around the domain. Third, through sharing, the group develops a collection of best practices and uses their shared experiences to solve problems. The shared collection of experiences becomes a common knowledge base giving adults the skills they need when facing new situations. The communities stay together through shared learning and interest. In summary, a community of practice is a group of people who share a concern or a passion for something they do and they learn how to do it better as they interact on a regular basis (Gray, 2004). This definition takes into account that learning may be the reason that the community comes together or it may be an incidental outcome of the interactions of individuals.

Communities of practice encompass the technical acquisition of skills as required by a specific practice, but add the dimension of allowing the informal and social aspects of creating and sharing knowledge. Individuals in a community of practice learn to function in that practice as well as become acculturated to the community’s behaviors, viewpoints, and language. Participating in a community of practice, even at its periphery, is considered authentic learning and it is through participation that members learn how to do and just as important, how to be (Wenger, 2001; Wenger, McDermott, & Snyder, 2002).

Gray's (2004) study reported that it is possible to meet the informal learning needs of a professional association. The coordinators of the Alberta Community Adult Learning Council participated in an online community of practice designed to support informal workplace learning. The study found that through active participation and peripheral lurking, newcomers to the association were oriented to new skills and the culture of practice. Findings included that the role of the online facilitator is critical in sustaining the online community. This example demonstrates the merit of a community of practice for newcomers to a professional association. The lessons learned may apply to new, adult, online learners in a university setting as they transition to an unfamiliar academic environment.

Technology can facilitate the growth of an online learning community by providing a gathering and communication space for its members. An effective and accessible use of technology for online discourse can foster virtual learning communities (Schwier, 2002). It is crucial for a learner to feel that (s)he is a part of a learning community where his or her contributions add to a common knowledge pool and where a feeling of community spirit is fostered through social interactions (Rovai & Whiting, 2005). In the traditional on-campus classroom, students can informally interact with each other before and after class in common spaces such as the classroom and hallways. Those chance encounters encourage informal communication and social connections that enhance the students' pedagogical experience. Meeting in the common spaces allows for casual discussion about class material, assignments, other courses, school events, and other topics that might not be appropriate during class time. Students taking online classes do not have those common spaces that allow for informal interaction and communication (Nicholson, 2002).

Learners should receive encouragement to communicate with other students outside the formal venue of the online class whenever possible (Bold, 2006). Using a variety of media to facilitate communication and deliver instruction enhances learning (Cain et al., 2003). The Internet has advanced the ability to interactively communicate, blurring the lines between time and distance. Students that participate in online instruction can access a variety of web-based communication tools that enhance the interactivity and the social aspect of the learning process (Parker & Rossner-Merrill, 1998,).

Bold (2006) described how she used a Wiki to support collaboration among her online students. A Wiki is a set of related web pages that can be authored individually or collaboratively by a group. Using an ordinary web browser, a page is authored through the display of a simple mark up language. Collaborative documents can be displayed immediately without knowledge of HTML tags (Bold, 2006). A document can be changed using the live edit feature in a web browser while connected to the Internet. In contrast, a collaborative document in a course management system (CMS) requires using a word processor to save the document, the document needs to be uploaded, and then downloaded by the other authors. After they have made changes the process starts over again, with each author having to wait to make changes.

Nicholson's 2002 study, found that online students who used instant messenger (IM) services felt a strong sense of community and IM gave them another venue for informal social communication allowing them to share information about class material, information about school, and their degree program. IM has been shown to support online students emotional well

being, sense of belonging, as well as social presence awareness (Rossade, Heins, & Hampel, 2005).

Instant messaging services comprise a small program that runs in the background on a user's computer connecting to a central hub program on the Internet. The central hub program allows users that have the same software to connect to each other. When users are aware that a person they want to communicate with is available they can send messages and respond in real-time. The IM service notifies the user when other users on their approved list are available to send messages. This is comparable to a student lounge; it is as if a student can talk to another person in the room allowing for a common space for a chance meeting with others. Some IM services allow multiple participants in each chat, even allowing two users to talk if both have a microphone attached to their respective computers. If the users have a broadband Internet connection and webcams, the participants can see and talk in real-time. Another feature of IM is that users can send files to each other without using email (Nicholson, 2002). An attractive feature of IM is that most services are free and come already installed on a computer (Miller, Jenkins-McKendrick, & Murphrey, 2005).

Web-based conferencing programs allow students another avenue to communicate in real time. These programs such as Centra<sup>®</sup>, Elluminate<sup>®</sup>, or Breeze<sup>®</sup> allow multiple participants to talk to each other, view a PowerPoint presentation, and if they have a broadband connection see a small video of the presenter. A person with a 56K dialup connection can participate using the program if no video is included. Use of the software is very straightforward. An administrator can set up a virtual meeting and then a URL for the meeting is sent to the participants. In addition, online meetings can be recorded and accessed at a later date for review. Students have reported that using a web-based conferencing system helps them feel connected to the rest of their classmates (Miller et al., 2005).

When adults are new to online learning, it is suggested that web-based communication tools may provide a common place for them to gather and communicate. When the technology is easily accessed it can help foster a virtual learning community. Will that same technology allow for a community of practice to be established over the life of the doctoral program? Is a community of practice an integral ingredient that will help online students succeed in their program of study and be satisfied with learning in an online environment?

## **Purpose**

The following objective guided this study: Explore and describe whether a community of practice can be established using web-based communication tools, examine whether those tools help new, adult, online, doctoral students adapt to online learning, and increase a student's satisfaction and perception of success with online learning.

## **Method**

This study was classified as expansion research within the qualitative research paradigm using naturalistic inquiry. The purpose is not to yield the same results as previous studies; the purpose is to expand on the constructed realities and processes of previous studies and “seek initial illumination of the context of another study” (Erlandson, Harris, Skipper, & Allen, 1993, p. 45). Qualitative inquiry pays particular attention to meaning in context and the researcher looks for underlying meaning while gathering and analyzing the data (Merriam, 1998). A principle of qualitative studies is that “reality is holistic, multidimensional, and ever-changing” (Merriam, 1998, p. 202) allowing the researcher to understand how the participants in a study make meaning of their experiences.

A case study design was used to provide illumination of the research objective. According to Gall, Gall, and Borg. (2003), a case study is used to explain a phenomenon – the events, processes, persons, and/or things that interest the researcher. This study used a purposive sample, “the goal is to select cases that are likely to be ‘information rich’ with respect to the purposes of the study” (Fraenkel & Wallen, 2006, p. 483).

The natural setting for this study included all 19 students in a new cohort of a distance delivered doctoral program, using multiple delivery technologies. The researcher designed a Wiki (editable web page) as a dedicated shared web space for the cohort to interact virtually outside of the institutional classroom. The Wiki was a private space for the students having no interaction from faculty members, with the researcher assuming the role of facilitator. During the cohort's face-to-face (f2f) induction (August 2006,) they attended a session that introduced them to the reason for the study, taught them how to use the Wiki, were given a handout that explained how to use the Wiki, and were instructed in the use of an activity to promote engagement and dialog among the cohort. During the introductory session the participants were asked to sign a Student Consent Form approved by the Institutional Review Board, IRB #2006-0421.

### *Data Collection*

At the end of the students' first semester (December 2006), each participant was interviewed using a semi-structured open-ended interview protocol developed by the researcher, assessing their experience with the Wiki and other web-based communication tools. The personal interviews were recorded and transcribed. Respondents were coded with a unique identifier to track trends in the data to ensure confidentiality.

Following the completion of the cohort's first semester, postings on the Wiki were evaluated using content analysis to assess engagement. "Content analysis is a technique that enables researchers to study human behavior in an indirect way, through an analysis of their communications" (Fraenkel & Wallen, 2006, p. 483). Patton (2002) writes "Content analysis is used to refer to any qualitative data reduction and sense-making effort that takes a volume of qualitative material and attempts to identify core consistencies and meanings" (p. 453).

### *Data Analysis*

The constant comparative method was used on collected data to compare across categories and construct meaning (Denzin & Lincoln, 2000). This method described by Glaser and Strauss (cited in Erlandson et al, 1993) employs four distinct stages: (a) comparing incidents applicable to each category, (b) integrating categories and their properties, (c) delimiting the theory, and (d) writing the theory.

Credibility is supported through prolonged engagement, establishing trust and a rapport with the respondents. The researcher is a member of the previous cohort of the doctoral program and was the facilitator of the Wiki allowing prolonged engagement. Triangulation, enhancing credibility, was achieved through analysis of the semi-structured interviews and the content analysis of the student postings on the Wiki. Draft copies, for peer debriefing of the findings, were sent to a department head at a separate institution, who teaches online classes and has participated in online classes. Member checks were accomplished by sending a synthesis of each interview to respondents, asking for verification of accuracy. Transferability was achieved by providing enough detail from the purposive sample and resulting thick description, so that others can decide if the findings may be applied to other situations. While naturalistic inquiry does not attempt to generalize the results of one study to another population, some generalizations may be applicable in similar situations. Keeping detailed records of all collected data and resulting analysis achieved dependability. A copy of each interview was printed and a synthesis of the answers was provided to each respondent for verification or correction. All documents and notes were retained for inspection. Lastly, confirmability of the study was addressed by including quotes from the raw data that support the construction of theory and conclusions proposed by the researcher. While researcher bias may be impossible to completely separate out of the study, the design of this study may introduce new or unique insights that follow from certain biases of the researcher.

Qualitative research is an activity that locates the observer in the sphere of the study (Strauss & Corbin, 1990) and while a qualitative inquiry does not require distance from the data and objectivity, the researcher is aware that the dual role of facilitator and researcher may affect the participant's responses to the research questions. However, due to theoretical sensitivity, that limitation may be counterbalanced due to the researcher possessing the personal and professional experiences necessary to develop an awareness of the subtleties in the meaning of the data and the ability to understand the context. The researcher kept a self-reflective journal throughout the research study in an effort to explore presuppositions, assumptions, and biases allowing participant's meanings to dominate the findings.

Data from the interview and the content analysis of the Wiki were evaluated using Wenger's (1998b; 2001) communities of practice framework. The resulting analysis was used to offer illumination of the research objective as it concurs with theory, negates existing theory, or expands on existing theory as illustrated by the literature cited.

### **Findings**

A composite snapshot of the cohort shows that the members of the cohort were adult learners and new to online learning. The group was scattered across the United States and Canada, they were busy professionals with families and they had access to a high-speed Internet connection at home or work. The group liked online learning although they had to make adjustments in order to be a student again as they had been absent from a formal classroom from 1 to 15 years. The students were confident in their ability to do the work that is necessary to complete their program and most felt competent in using the technology needed to earn their doctoral degree at a distance. The cohort felt a strong sense of community within their group. Most of the students felt that an informal social connection was beneficial to their efficacy in the program. Even though all the students had access to the web-based communication tools to interact with each other, three students felt isolated until they participated in a group activity for one of their classes. After they were involved with the project, the three students increased their interactivity with the remaining cohort members.

#### *Web-Based Communication Tools*

The idea behind using web-based communication tools, especially the Wiki, was to provide the students a virtual place to gather. Would this place help build a community of practice (CoP)? The Wiki was set up so that only the cohort members and the facilitator had access to read what was posted, post and answer questions, and upload documents. The reasoning behind that thought was the students would like the ability to interact and not feel like they had to be guarded in how they posted with respect to faculty members or the program. The Wiki was meant to be a technological solution to help the cohort work together as a CoP.

Wenger (1998b; 2001) stated that there is no perfect technology solution to use with a distributed CoP but some tools may be useful. A CoP is composed of three crucial characteristics. First, there is a focus on a domain of shared interest. In this case, that domain is the doctoral program in Agricultural Education. Second, as members of the community pursue their joint interest in the domain, they participate in joint activities, they hold discussions, they help each other, and they share information. It is through those interactions that community is formed around the domain and relationships are built. The third characteristic is that members of the community develop a set of resources that they share: experiences, stories, tools, and ways to address problems – in other words a shared practice of operating within the domain. It takes time for this to occur.

#### *Wiki*

The Wiki was set up to allow the cohort to have a dedicated web-space where they could ask and answer questions about the program, their classes, or any topic they might need help with, have a space to store documents, and to allow a way for them to socialize with each other.

The use of the Wiki would allow for activities that are integral to a CoP (Wenger, 1998b, 2001; Wenger et al., 2002). It could be a repository for documents the cohort wanted to share, they could hold a discussion about class work or any topic of interest, they could post pictures and videos, and it was free for them to use. For students that did not participate in the discussions, they were still able to lurk (read but not post) and learn. Ideally one person could post a question that might be of interest to many in the cohort. A question would only have to be answered once; it would remain on the Wiki and be helpful to all. The Wiki was a tool that was selected because it would be easy for the cohort to access; all they needed was an Internet connection and a web browser. The Wiki could be accessed and manipulated with a 56K dial-up Internet connection. A broadband connection was not required.

A total of 174 posts were made on the Wiki. All but three students posted on the Wiki at least one time. Five students (one female) wrote 84% (146) of the 174 posts. The facilitator posted 20 times in response to questions or comments from the students. The facilitator thought that (s)he shouldn't be too present on the Wiki, that the best way to judge how useful it was would be to allow the cohort to post topics that were important to them. The facilitator didn't want to jade their thinking or activity. Even though the facilitator had been a new inductee to the program three years earlier, his/her concerns then, may not be the same as their concerns now. Activity on the Wiki stopped on October 20, 2006. During the time from August 22, 2006 to November 11, 2006 the Wiki was used to discuss classes, tests, assignments, and committee member selection. The participants shared aspects of their personal life as well. The Wiki was never utilized with the sharing of documents or collaboration on group projects. When cohort members shared documents, they did so through email.

### *MSN<sup>®</sup> Instant Messenger*

During the time that the Wiki was active the facilitator encouraged the cohort to look into using MSN<sup>®</sup> Instant Messenger (IM) as a way to communicate with each other. The previous cohort started using IM halfway into their second semester as a way to stay in touch with each other and they really enjoyed their contact with each other. The previous cohort did not communicate with each other by email very often. One of the participants of this study liked the idea and put together a cohort contact list comprised of email addresses, phone numbers, and MSN<sup>®</sup> contact information. Not all students updated their information nor did they all have MSN<sup>®</sup> sign-in names.

IM was not adopted by all cohort members. Initially it was used during class by a few of the students to communicate with each other without breaking into the ITV class session. Eventually it was used whenever a person had a question or wanted to chat when they saw another cohort member was online. IM would also allow group chats for as many students as were online at the same time.

At the point in time when the interviews were conducted, about half of the cohort used MSN<sup>®</sup> to converse. Since that time a few more have adopted use of IM. One of the final posts on the Wiki explained the drift away from the Wiki to other forms of web-based communication, "I think we've converted to the IM and Centra<sup>®</sup> world. Seems like we're answering our questions faster these days that way."

### *Centra<sup>®</sup>*

The cohort had the opportunity to use Centra<sup>®</sup>, web conferencing software, on Tuesdays as an instructional supplement to their two Wednesday classes. The students downloaded the software and once they were scheduled to be part of a conference, they would sign in and they could talk to each other in real time. All they needed was an inexpensive microphone attached to their computer. They could upload documents to share and they could upload PowerPoint presentations. Centra<sup>®</sup> allowed them to share their desktop or applications, and if they had a web cam they could also use video if they had a broadband connection. One attractive feature of Centra<sup>®</sup> is that the sessions can be recorded and listened to at a later point in time. That was beneficial for a student that missed the session.

There was one time when a student could not attend the Tuesday Centra<sup>®</sup> session but (s)he didn't want to miss anything, the student asked on the Wiki, "Could someone please, ever-so briefly, summarize what happened on Centra<sup>®</sup>? I got stuck in a meeting. THANKS!" Several of the cohort members used Centra<sup>®</sup> in their Extension jobs and were able to set up Centra<sup>®</sup> sessions for additional interaction outside of the Tuesday sessions. For students not in Extension, they had to send off an email asking to have a Centra<sup>®</sup> session, when and with whom and a staff member scheduled the session for them.

### *Usefulness of Web-based Communication Tools*

Whereas the cohort is not located in close proximity to each other and have no easy way to meet, they were asked their opinion about using web-based communication tools (Wiki, Centra<sup>®</sup>, IM, Email) in connecting with their cohort members. Most of the students responded that the tools were useful. Some went on to explain their thoughts:

- Carl: It primarily started with the issue analysis project for our [philosophy] class. Up until that point, I had very little communication with others in the class outside of class time. I am not a loner; I like to communicate with people. I am a red, so it has been extremely helpful to communicate with others in the cohort on a regular basis.
- Jeff: I would miss using IM. Every so often emails will be sent to the whole cohort with something that may be of interest to everybody. It is important to socialize and it would be a hindrance if that was taken away.
- Katie: There is no other way to contact our classmate in Canada. I will go to web-based communication tools before I will use the phone. I use the tools on a continual basis, at least once a day there is an email of a response or something, and that is on a slow day. Usually it is much more.
- Veronica: It is vital. I don't know how else we would do it. We interact pretty regularly. Some in the cohort we never hear from. There are about 10 of us that communicate a lot.

- Dorothy: I can't imagine being in this program without those tools one way or another. Each tool has a positive and a negative. Up until a day ago I was talking to a cohort member everyday.
- Tammy: It would be really difficult to establish even a secondary relationship with everybody if you didn't have these tools. Even with as cheap as cell phones are these days, it is so easy to shoot people an email as opposed to calling them on the phone and interrupting dinner or whatever. For some of the people the only time I talk to them is during class time. Probably about half the class we IM and email outside of class.
- David: With email you are limited in the inflections that you can put in. With TTVN that is one way but it is still kinda iffy. With the Wiki and with being able to hear each other on Centra<sup>®</sup>, those helped because you could – while I really do like to get to the point when I am studying – when I am not studying I like to hear things and know about people and understand why you are asking the question you are asking. Some people may not remember that I have no background in Ag Education. So, when I ask a question it isn't for just an answer, I really want to know.

However, even though there was activity on the Wiki, students were using and enjoying IM, with Centra<sup>®</sup> sessions occurring every week, three students felt isolated and not part of the cohort until they participated in a group presentation for their Philosophy class. They explained that it took being part of a group project for them to establish a social connection. From that point on, they used the web-based communication tools to further establish their informal social connection.

### **Conclusions/Recommendations/Implications**

By using the Wiki, IM, and Centra<sup>®</sup> the students were able to establish a community of practice during their first semester in their distance delivered doctoral program. It is too soon to tell if their community of practice can be maintained using web-based communication tools especially since the Wiki lost favor with those that used it. IM is used by many in the cohort and is seen as a quick way to get answers to questions and to socialize with members in the cohort. At the time of the interview only eight students had an IM account. Centra<sup>®</sup> proved to be a usable tool permitting cohort members to collaborate on projects and share information as they prepared for exams; the students liked the ability to talk to each other and they could see people who used web cams. After one semester the cohort is at an embryonic stage of a community of practice. Time is needed to examine whether the students keep using the web-based communication tools as they presently are, if they find new uses for the tools during the next few years, or adopt new tools that may come along as they complete their doctoral program. A concern with the demise of the Wiki is that students who like to lurk, no longer have that ability.

I recommend that the cohort be reevaluated when they have completed their class work and again when they are close to defending their dissertation in their use of web-based

communication tools to assess the ability of those tools to maintain and support this community of practice past the embryonic stage.

The web-based communication tools contributed to the students' acclimation to online learning as they were instrumental in teaching new skills needed for doctoral study, allowed the students to help each other with class work, and provided emotional support. Receiving support from their classmates contributed to a sense of confidence that grew as the semester progressed. Not every tool was used by every student; however the students that adopted use of either the Wiki, IM, and/or Centra<sup>®</sup> said that the tools were vital in establishing and maintaining relationships. To enhance the ability for the students to gather and share information it takes a variety of tools as the students used all three plus email. This finding echoes Cain, Marrara, Pitre, and Armour's (2003) recommendation that a variety of media be utilized to facilitate communication.

Membership in a community of practice involves whoever participates (Wenger, 1998a); future study of this cohort should examine why students have/have not engaged in activities. Is their engagement or lack of engagement in the community of practice a personality trait, due to their extrinsic or intrinsic motivation, or possibly their level of self-direction? It would also be beneficial to investigate the development of community or lack of community and the resulting stages with students that progress through an online program as individuals not part of a cohort.

Is the use of the tools based on the needs of the learners? Wenger (1998a) states that communities of practice go through stages of development "characterized by different levels of interaction among the members and different kinds of activities." (§ 12). The stages of development model (Table 1) proposed by this study needs to be tested as to its viability. Further investigation is needed to examine what developmental stages the cohort may go through as they progress through their program, how they interact, and what activities they use in their community of practice. This examination needs to discern if there are definite patterns that explain engagement.

Table 1

*Student Needs and Use of Web-based Communication Tools During the First Semester in a Distance Delivered Doctoral Program*

Induction/First Six Weeks	Mid Semester	End of Semester/Finals
<ul style="list-style-type: none"> <li>• Students find the face-to-face induction vital to establishing a sense of community.</li> <li>• Students feel overwhelmed with the amount of information conveyed during the induction, a few would like to know more, many are aware that more information will come.</li> <li>• Students would like more time with faculty, especially as they need to select committee members and find it difficult when they have met faculty for only two days.</li> <li>• Students experience distress and would like instruction on use of the Course Management System, APA style writing, and online library use.</li> <li>• Students start interacting with each other using the Wiki, they express uncertainty and doubt. They have conversations about school as well as social interaction. They feel the need to connect with their cohort members. Students are unsure of what instructors are looking for; they want more specific parameters for assignments.</li> </ul>	<ul style="list-style-type: none"> <li>• Students abandon the Wiki for IM to receive quicker answers to questions. While communication is mostly school related, students still use IM for social communication.</li> <li>• Students use Centra<sup>®</sup> to work on group projects as they can talk to each other and see one another if a web cam is available. They like hearing real voices; they feel more connected to each other.</li> <li>• Three students start to feel less isolated due to working in groups.</li> <li>• Students use Centra<sup>®</sup> to study for mid term exams.</li> </ul>	<ul style="list-style-type: none"> <li>• Students that had unease using technology at the beginning of semester, feel more competent.</li> <li>• IM still in use on a daily basis by some students. They report needing their <i>daily fix</i> of contact with cohort members</li> <li>• Students that felt isolated until participating in a group class project, now use web-based communication tools to have contact with cohort members.</li> <li>• Students looking forward to seeing each other at the next scheduled f2f.</li> <li>• Some students still struggle with self-direction and self-discipline needed for doctoral study.</li> <li>• Some students lack understanding of the program requirements.</li> <li>• Students' confidence is high that they can be successful with their coursework.</li> </ul>

Schwier (2002) cautions that “Virtual learning communities do not just happen; but neither are they created” (p. 3). As educators we can promote the development of learning communities and encourage their use, but ultimately it is the learners who decide if they will use the provided tools and they will determine if a community emerges. If and when a community emerges it takes time for a community of practice to develop (Wenger et al., 2002). While we can not force the development of a community of practice among new graduate students, a laudable goal would be to help one develop and planned for in the design of online programs and classes.

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