

Creating Connected Communities of Inquiry Through an Electronic Reserve System

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Abstract:

The challenge for educational units is to establish learning communities and learning structures that can sustain the learning culture. Technologically mediated instruction offered at a distance is becoming an important feature in the realm of higher education. Faculty members at Drury University utilize the Docutek Electronic Reserve System (ERes) in order to provide students with essential academic materials and asynchronous communication abilities. ERes, an uncomplicated system that has helped shape the teaching and learning environments of higher educational institutions around the world, has the capacity to create connected communities of inquiry in cyberspace.

A community is “a group of people having fellowship, a friendly association, a mutual sharing, and common interests” that can lead to a “sense of belonging and of obligation to the group” (Berns, 1997, p. 424). A community of inquiry that is deemed successful “is not one in which everyone is the same, but instead is one that accommodates plurality and difference” (Bruce & Bishop, 2002, p. 708). Individuals are able to discover their unique nature, personal value, and designated role in life through their community connections (Willison, 2003), which coincide with the concept of experiential learning initially advocated by Dewey (1933). The challenge for educational units is to establish learning communities and learning structures that are able to sustain the learning culture that “exists when a school's beliefs, values, and norms support adult learning” (Cosner & Peterson, 2003, p. 13). A community of inquiry encourages members to be “committed to ongoing research, critical reflection, and constructive engagement with others” and promote “respect, open-mindedness, perseverance, integrity, and a sense of justice” (Darling, 2001, p. 8).

Supovitz (2002) claims that communities require systematic structures within which to organize cultures of inquiry. Drennon (2002) indicates that communities of inquiry can include: (1) critical reflections; (2) meaningful dialogue; (3) collaborative research; and (4) collective action (p. 61). A *Practical Inquiry Model* developed by Garrison, Anderson, and Archer (2001) evaluated collaborative learning outcomes achieved through online courses taught at institutions of higher learning by incorporating various components into a single evaluative framework. The researchers determined that online course participants are involved in both a private domain and a public domain during their virtual learning experience. Shared information appears more prevalent

during online discourse; constructed knowledge is more difficult to ascertain during cyber interactions.

A community of inquiry involves three elements relating to an educational experience: “cognitive presence, social presence, and teaching presence” (Garrison, Anderson, & Archer, 2001, p. 3). Social presence is “the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Rourke, Garrison, & Archer, 2001, p. 5). Building communities of inquiry through online interactions requires social relationships on a cyber level that will effectively allow students and teachers to make significant personal and academic connections. One way to accomplish this goal is through the use of Docutek Electronic Reserve System (ERes).

Faculty members at Drury University have been utilizing the Docutek Electronic Reserve System (ERes) since the beginning of the 1998-1999 academic year in order to provide students with necessary course materials and asynchronous communication abilities. ERes has helped shape the teaching and learning environments of higher educational institutions around the world. Kesten and Zivkovic (1997) describe ERes as a stand-alone system that uses intuitive point and click interfaces in conjunction with a context-sensitive support structure. The user-friendly format has eliminated the need for extensive technical training when using the system. Negative aspects associated with electronic instruction include a feeling of disconnectiveness from class members with no face-to-face contact, a lack of consistent communications, technical challenges, and confusing feedback (Brown, 2000). In spite of the negative perspectives, technologically

mediated instruction offered at a distance is becoming an important feature in the realm of higher education.

Theory of Learning

Learning is a complex development that can be defined as “a relatively permanent change in behavior (and/or) mental associations due to experience” (Ormrod, 1998, p. 202), which necessitates the interaction of various dimensions:

- Disposition: the proclivity of an individual to be inclined to do or not to do something
- Capability: the physical or mental attributes required to perform or accomplish a specific task
- Actual Performance: the observable behavior of the individual after the instruction or conditioning
- Performance Facets: (a) motor learning – muscular/physical; (b) affective learning – emotions; and (c) cognitive – information/ideas
- Performance Sensibility: the ability to sense what is going on within one’s environ by assessing whether response to an event is beneficial or harmful by recalling the event, reviewing the prior response, evaluating the previous consequences, and responding with a similar or different behavior based on the collected information

Learning does not require the direct transmission of knowledge from a teacher to the learner. Instead the endeavor of learning and teaching involves assisting students in the construction of knowledge from the domain of relevant experiences (Vahey, Enyedy, & Gifford, 1999). The responsibility of teachers is to consider what their students need to know or do in conjunction with how their students should demonstrate the designated level of knowledge or skill. Individuals “draw on different dimensions of knowing –

different forms of expression, different kinds of ideas, and different cultural frameworks” (Bruce & Bishop, 2002, p. 708).

Learning can be a formal or informal process. Formal learning is an intentional construct that typically occurs in an artificial environment. Informal learning can be described as the spontaneous instructional efforts that are part of the everyday fabric of life normally linked to authentically-based applications. A majority of human learning occurs in the workplace, which can be categorized as an informal learning environment. The *Social Constructivist Theory* promoted by Lev Vygotsky, a Russian psychologist and philosopher, states that: (1) cultural and social contexts influence learning; and (2) community plays an important role in the ability of the learner to make meaning.

Experiential learning and adaptability are two components directly associated with human intelligence. Learners can use technology to support experiential learning for “when students use technology to access information, analyze it, interpret it, and represent it in a new way, the computer becomes a conduit for the construction of knowledge” (Owens, Hester, & Teale, 2002, p. 620). Learning is perceived as a social and collaborative activity and “collaborative interactions are an essential element of any pedagogy which assumes that good learning is collaborative” (Pawan, Paulus, Yalcin, & Chang, 2003, p. 119). The teacher is responsible for designing the collaborative efforts.

The teacher acts as the “facilitator and co-creator of a social environment conducive to active and successful learning” (Anderson, Rourke, Garrison, & Archer, 2001, p. 2). A study by Baker (2004) claims that the instructor has a significant influence on the learning process, including the online classroom environs. Teachers can maintain their influential connection through verbal immediacy by providing assignment feedback,

dialogue topic selection, active postings, dynamic engagement, discussion moderating, and individual responses; however, it is possible for “meaningful discussion to take place without the presence of the instructor” (Pawan, Paulus, Yalcin, & Cheng, 2003, p. 129) during an online course.

Inquiry-Based Learning

Inquiry, a “process to stimulate students’ critical thinking skills in which the teacher serves as a facilitator . . . (helping) to encourage a desire for learning, and problem solving” (Thakkar, Hogan, Williamson, & Bruce, 2001, p. 215), is one way that humans can make sense out of their experiences. The constructivist model of inquiry supports the acquisition of personal meaning through the learning experiences; therefore, learning environments should emphasize the “active intellectual engagement of students; in-depth study of a limited number of topics; use, rather than storage of, raw data and primary sources; hands-on, collaborative, and experiential learning; application of what is now called complex or higher-order thinking; and production of new, rather than reproduction of given, knowledge” (Beyer, 1995, para. 8).

Since knowledge cannot be viewed as static, it is essential that “the learner as an inquirer learn(s) through work on meaningful problems in real situations” (Bruce & Bishop, 2002, p. 708). The inquiry-based learning model promotes active engagement of students within a rich and meaningful learning experience. Through collaborative inquiry “participants contextualize new tools and construct ways of talking, acting, and thinking that serve their purposes” (Hogan, Williamson, & Bruce, 2001, para. 1). Inquiry is “the primary process by which professionals and researchers acquire new knowledge” (Buch & Wolff, 2000, p. 105). Inquiry requires the integration of the following components

(Branch & Galloway, 2003; Bruce & Bishop, 2002; Thakkar, Hogan, Williamson, & Bruce, 2001; Seamon, 2001; Buch & Wolff, 2000):

- Questioning (Posing-Asking-Observing)
- Investigating (Identifying-Retrieving-Processing-Correlating-Organizing-Planning)
- Answering (Collecting Data/Information-Predicting)
- Creating (Developing-Designing)
- Communicating (Sharing-Discussing)
- Evaluating (Reflecting-Resolving)

Assignments and activities associated with an inquiry process are normally open-ended to encourage creative and divergent thinking. An inquiry-based learning model typically recommends a focus on collaborative interaction that requires both group and individual accountability (Buch & Wolff, 2000). Students learn through inquiry-based experiences “how to cope with problems that are ill defined and can help students deal with changes and challenges to their understandings” (Branch & Galloway, 2003, p. 6). Numerous education experts and reports “concur that inquiry-based projects successfully facilitate learning” (Thakkar, Hogan, Williamson, & Bruce, 2001, p. 215).

The Importance of Community

In earlier times, place was the primary determinant for what constituted a community. Individuals were tied to the land and had relatively few opportunities to travel far from their domicile. Today, in the 21st Century, place seems to be a thing of the past for many people. While there are many locations that exude the essence of place, most individuals today do not feel tied to any certain geographic location.

In turn, the concept of community has evolved from a specific geographic location (place) and has become much more complex. Communities can exist without regard to location. Communities are not constricted by temporal boundaries either. Today's community is just as likely to be an Internet chat room as the proverbial courthouse lawn where the men gather to whittle.

While the conception of community has undergone radical transformation in recent years, the very idea of community continues to be important to people whether it is tied to a particular place or not. Allen and Dillman (1994) observed that, "Community was in essence declared dead in the face of the industrialization, urbanization, and suburbanization processes that dominated America during the 1950s" (p. 26). They also describe the processes taking place today, "The information era, just now in its early stages, is the result of forces that destroy hierarchy and strengthen people's direct ties to the global economy, irrespective of national or community ties" (p. 29).

Bellah, Madsen, Sullivan, Swidler and Tipton (1985) in discussing Alexis de Tocqueville's interest in community, point out that to Tocqueville, community functioned as the "countervailing tendencies that pull people back from their social isolation into social communion" (p. 38). The benefit of community, or as Tocqueville styled it, "active involvement in common concerns", was that, "the citizen can overcome the relative isolation and powerlessness that results from the insecurity of life in an increasingly commercial society" (p. 38). Certainly, isolation was common for many people when the concept of community revolved around a specific geographic location.

Using Tocqueville's insights the following functions of community can be identified for the 21st Century: (1) eliminating social isolation and powerlessness; and (2)

enhancing social communion through involvement in common concerns. While communities in specific geographic locations can certainly carry out these two functions, the functions themselves are not restricted to only a sense of place. Indeed, in the 21st Century many communities exist with little regard to spatial or temporal restrictions. This is a relatively new phenomenon made possible by advances in communications.

The first telegraph was constructed in 1855, the first telephone in 1876, the first viable computer made its appearance during World War II (Lienhard, 2000), and the union of computers and telecommunication was consummated in the advent of the Internet. While the telegraph, telephone, and eventually radio, television, and satellites served to connect disparate parts of the world and led to the rise of globalism, it wasn't until recent years that the world was considered "wired".

The widespread introduction of computers and modems has enabled all parts of the world to become part of the global village, relegating the idea of community as place to the sidelines. Today's farmer in Montana or factory worker in India is as likely to be part of the same community as next door neighbors were in the 1950s. The only difference is that this community is created in cyberspace.

In the field of education, the concept of community is especially pertinent. There are many benefits to building a sense of community in the nation's schools. Schaps (2003) gives the following as examples: students with a strong sense of community are more likely to be involved academically; more likely to act ethically; more likely to develop social and emotional competencies; and more likely to avoid drug use and violence (p. 31).

In agreement with Tocqueville's descriptions of the functions of community, Schaps (2003) relates the following: "We also bond with the people and institutions that help us satisfy our needs which makes the creation of caring, inclusive, participatory communities for our students especially important" which corresponds to eliminating social isolation and powerlessness; and "when a school meets students' basic psychological needs, students become increasingly committed to the school's norms, values, and goals" (p. 31). This corresponds to enhancing social communion through involvement in common concerns.

On-line Community

On-line community is created in several ways, but the predominant paradigm is through the use of discussion boards. Courses can be delivered either through the traditional, seated method or they can utilize the Internet exclusively (on-line courses) or through using the Internet as an additional resource with opportunities for on-line interaction (hybrid courses).

As Ko and Rossen (2004) point out, the use of on-line communication can be especially helpful in large, lecture type classes:

Contrary to common wisdom, the Web can humanize such a class and permit students far more interaction with their colleagues and instructors than might otherwise be possible... Students using the discussion board will thus have a work group composed of class members whom they might not ordinarily get to know, a considerable advantage in schools where a majority of students don't live on campus, or in large universities where most students know only their dorm mates. (p. 245)

Other examples of the use of discussion boards include readings, the preparation of position papers, the posting of and responses to questions, and responding to other students' comments (Ko & Rossen, 2004, pp. 243-245). The use of a discussion board must be distinguished from the use of chat rooms. Discussion boards enable the posting of messages in an asynchronous (not at the same time) manner while chat rooms require the use of synchronous (at the same time) communication. In a discussion board, the instructor or students can read and respond to various items at anytime while in a chat room the instructor and students must be on-line at the same time. Discussion boards enable the creation of community without regard to spatial or temporal restrictions.

How does the Electronic Reserves System (ERes) impact community?

ERes, a product of Docutek Information Systems, Inc., has been used by the faculty of Drury University in Springfield, Missouri since 1999. The authors have utilized the ERes system in their classes for the past five years.

Some of the features that make ERes particularly attractive to the authors are: the ability to post course readings, syllabi, and course resources; the storage of student documents (electronic portfolio); the ability to post course announcements in case of inclement weather; and, the discussion board function.

These features, especially the discussion board function, help address the two functions of community identified by Tocqueville: eliminating social isolation and powerlessness and enhancing social communion through involvement in common concerns. By requiring that students complete a portion of their course objectives on-line, the authors have found that students who are quiet and reserved in the seated portion of the class become more outspoken. This eliminates social isolation and encourages

psychological well-being as Schaps (2003) has argued. Through the use of discussion boards and on-line group activities, social communion is enhanced as Ko and Rossen (2004) maintained.

Technology and Communities of Inquiry

The role of the computers in educational domains has expanded from “an advanced software tool” to a “medium that facilitates communication and sharing” (Perrone, Repenning, Spencer, & Ambach, 1996). Computer-Mediated Conferencing (CMC) or Computer-Mediated Communication Systems (CMCS) are considered an invention of the academic realm of higher learning to provide assistance as a content-transmission tool and a communication-support tool due to “the convergence of technological and institutional factors” (Benbunan-Fich & Hiltz, 1999, para. 2). CMC-based education is synonymous with "Asynchronous Learning Networks" (ALN) (Benbunan-Fich & Hiltz, 1999) providing student-to-student and instructor-to-student connections; however, a synchronous learning environment can also be supported by CMCS (Paulus, Yalcin, & Chang, 2003). Alavi, Wheeler, and Valacich (1995) identify three different collaborative telelearning environment structures in their research: proximate distant groups; non-proximate distant groups; and traditional face-to-face groups. The authors discovered that all three of the learning environments result in successful acquisition of knowledge by the students, attainment of educational outcomes, and student satisfaction with the learning process experience. The technology, therefore, acts “as an external implement that enhances cognition” (Owens, Hester, & Teale, 2002, p. 620).

Conclusion

Pioneer teachers focused on developing community “by facilitating student-to-student discourse” (Anderson, Rourke, Garrison, & Archer, 2001, p. 2) and now that same teacher role is being replicated through an on-line venue. Virtual communities are a unique entity in that they are not confined to the constraints of time and space. Virtual communities are typically tied together on the basis of a common purpose. Once that purpose has been resolved, the community may dissolve completely or make adjustments to accommodate a newly defined purpose. The creation of a learning community is the responsibility of both the teacher and the student participants (Anderson, Rourke, Garrison, & Archer, 2001). The Docutek Electronic Reserve System (ERes) is one technological tool that is helping Drury University students increase their learning experiences through online communities of inquiry.

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