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BUILDING A VIRTUAL LEARNING COMMUNITY TO ENGAGE ONLINE STUDENTS; A MODEL FOR INSTRUCTORS: REPORT OF PHASE I OF AN ONGOING STUDY
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ABSTRACT
The purpose of this paper is to identify the different terms and identify the relationship of the terms to teaching practices for building a community in an educational environment. The terms will be addressed in this paper are: Learning Community, Communities of Practice, Collaborative Learning, Team Learning, and Active Learning. The research suggests that the term "active learning" is hierarchical and implies a group of different techniques as discussed below. The paper organizes these terms and discusses how they fit into the authors' preliminary model development regarding building a virtual online community.
Review of the research indicates that Learning Community, Communities of Inquiry, and Communities of Practice are more generalized places for learning; whereas instructors, students, and outside members can interact and communicate. These can represent a physical "on-ground" space or a "virtual" online space. In either instance, the community represents a manifestation of shared interest or practice. These created spaces enable more efficient active learning to take place and encourage deeper emotional linkages to the space, facilitators/moderators, peers, and other participants. In fact, the authors believe that Communities of Inquiry or Communities of Practice are each a type of Learning Community. Figure 1 presents the authors' opinion of a practical hierarchy for these terms and concepts.A Learning Community is a complicated entity which should include considerations of technology, emotional attachment, collaboration/cooperation, and best practices for active learning. Although a virtual community is not a physical space, it has many of the same needs, requirements, and overall benefits. For education, the virtual community has to be geared towards effective learning. The final section of the paper outlines the next steps in the research process and ongoing development of a trends on model for faculty.

Keywords: Virtual Community, Online Community, Active Learning, Collaborative Learning, Cooperative Learning, Communities of Practice

INTRODUCTION
Over the last few years, there has been tremendous growth in online educational programs and communities (Ke & Hadiley, 2009). Along with the growth of online education communities has been extensive research on many different facets of this trend. One area of interest involves tools and techniques for engaging the online learner. This is particularly important in a class where a majority of students are working professionals with limited time for school work and high expectations for gaining knowledge that can be directly applied to students' professional environments.
Research indicates higher student interest and engagement when active learning is emphasized using information technology (Khan, 2009). Ideas regarding the social view of learning have progressed in recent years as technology, the Internet and related technologies have "powered a paradigm shift to collaborative pedagogy in distance education" (Ke & Carr-Chellman, 2006, p. 240). Further, deeper course content not just relegating the information technology to a repository of information. There are a variety of tools and techniques available to assist instructors in building a successful virtual learning community.

Ongoing research focused upon building a successful virtual learning community identified a need for a simplified model summarizing the most relevant teaching strategies and techniques, which can be applied across different areas of study or majors. The model is intended to provide a "hands-on" virtual learning community tool that can be used both for training and as a reference by instructors on practical techniques. However, in the course of conducting research on building a virtual community, the authors discovered a plethora of literature and a wide variety of similar terminology, all of which have the intention of providing the building blocks for creating "community" in an educational environment. Thus, the authors determined that the first step in developing the model is to conduct a review of the literature, define the different terms, and collate the similarities among the various concepts.

The purpose of this paper is to identify the different terms and identify the relationship of the terms to teaching practices for building a community in an educational environment. The terms that will be addressed in this paper are: Learning Community, Communities of Practice, Collaborative Learning, Cooperative Learning, Team Learning, and Active Learning. The research suggests that the term "active learning" is hierarchical and implies a group of different techniques as discussed below. Finally, the paper organizes these terms and discusses how they fit into the authors’ preliminary model development regarding building a virtual online community.

**EFFECTIVE LEARNERS**

A discussion on building a community of learners may begin with a definition of "effective learners." "Effective learners are those who can cope with complexity, contradictions, and large quantities of information, who seek out various sources of knowledge, and who can create and sustain learning communities and networks" (Brindley et al., 2006, p.3). Faculty may strive to find ways to engage effective learning in the classroom, increased attention to student engagement and active learning strategies have become particularly relevant in today’s classroom environments (Williams & Chin, 2009). Williams and Chin also note that "these approaches are also considered to be meaningful when teaching ‘net generation’ students who have different styles and expectations." The Net generation (also known as the echo boom, Generation Y, or millennials) are now "latching" their parents on the "information track" (Wagner et al., 2008). The next generation learning expectations are greater than their historical peers.

Faculty may also have learners with disabilities. According to the National Center for Education Statistics, in 2004, 11.3 percent of undergraduates reported some type of disability (Chodock & Dolinger, 2006). Furthermore, Chodock and Dolinger report that the Learning Disabilities Association of America (LDA) defines a learning disability as a neurological condition that interferes with a person’s ability to store, process, or produce information. Therefore, it is essential that learners of all types and function be integrated into the online course. A powerful way to accomplish that is through development of a learning community.

The preliminary research phase of this ongoing project clearly identified a jumble of jargon, terminology, and explanations regarding a "community." The authors set out to further explore what a community is defined as and what learning modes contribute to it.

**LEARNING COMMUNITY AND COMMUNITIES OF PRACTICE**

In a learning community, learners collaborate as they work toward common educational goals such as a solution to a problem. Effective learners are actively involved in the process by participating in discussions, generating new questions and exchanging opinions with their peers and the instructor. This approach leads to development of critical thinking skills (Brindley et al., 2009). Hodder (2009) reports that particular place settings can aid in building learning communities; this is especially effective in programs that are residential in nature, which facilitates the development of a "community of scholars" in which undergraduates can interact not just with their peers but also with graduate students, research assistants, postdoctoral fellows, and resident and visiting faculty. Leather and Duarte-Marinho (2005, p. 42) discuss how the design of a physical building or teaching spaces can unleash learning. They note "the design team must think about how technology will be used to encourage academic collaboration between faculty and student, a classroom on campus and a classroom in another location, student and student, and faculty on and off campus."

Rhouac Smith et al. (2008) discuss the faculty learning community project at Howard University. This project involved a diverse group of men and women, tenured, tenure-track, and future faculty across science, technology, engineering and mathematics (STEM) disciplines. The purpose of the group was to engage in the scholarship of teaching and learning by learning about teaching, reflecting on their practice, and demonstrating competence or knowledge of effective teaching. Learning community activities included interdisciplinary seminars, linked courses, teaching experiments, and biweekly meetings. Learning community pedagogy promotes deep and meaningful learning (Martin et al., 2008).

Grandzol & Grandzol (2006), discussing AACSB standards for accreditation of business schools at the time of publication, note that the organization included focus on development of a learning community. The AACSB standards stated that such a community "...is established when constituent groups have opportunities to learn from each other, in an environment that supports free expression and learning."

Grandzol & Grandzol (2006, p.7), citing Gartsoon (2003), list 3 elements of a community of inquiry, which appear to be consistent with the concept of learning community:

1. Cognitive Presence – "cognitive reflection and discourse";
2. Social Presence – "students feel a personal and emotional connection to the subject matter, professor and their peers"; and
3. Teaching Presence – professor’s actions in creating and facilitating the learning community.

Wang (2007, p. 152) reviewed the benefits of learning communities and noted in the community of-learners, students take on the role of collaborative community members. They work toward their common goal to complete the task. In achieving this goal, they will listen to others and engage in brainstorming and discussion in order to find the best solution to the question or to complete the task. Students are provided with opportunities to express themselves and take initiatives. Teachers are guides who can intervene...
Akkerman et al. (2008) discusses the development of 'communities of practice'. According to Akkerman, the concept originally refers to collaborative practices that emerge naturally and educationally and human resource development practitioners are increasingly searching for ways to create these practices intentionally in order to stimulate learning and professional development in specific fields. Such professional communities are designed to share professional information, lessons learned, and expertise. The concept of learning as a collective process involving ongoing exchange of knowledge among participants has become well-accepted (Ke & Hoadley, 2009). For example, Engineering education increasingly incorporates pedagogies that promote guided, inquiry-based, active learning within authentic 'communities of practice' (Donath et al., 2005). According to Donath, such pedagogies apply observations made about workplace interaction: that knowledge is distributed across social and physical networks.

The author has direct experience with an engineering community of practice while working for the U.S. Army Corps of Engineers. This particular community was not well connected and mostly operated in more limited "pipe-dreams" where members in different engineering sub-disciplines communicated with each other via email and sometimes through discussion boards; however, the emotional attachment to the community was limited. In order to establish a more cohesive community of practice, Akkerman et al. (2008) suggests the group ask questions such as "How are we relevant to one another?" and "Who are we and where are we going?" with answers developed by the group itself. These questions relate to the development of meaningful activity (domain) and of shared activity (community). Following this, any coordinating system, any practice, should be subordinated to the motives of the group.

**COLLABORATIVE, COOPERATIVE AND TEAM LEARNING**

Prince (2004) defines and differentiates collaborative and cooperative learning. In Prince's view collaborative learning can be defined as a structured form of group work where students pursue common goals while being assessed individually. Collaborative learning can take place in different settings, including through discussion among students as a class or within smaller groups (Brindley et al., 2006). According to Brindley, p.2, some of the pedagogical benefits of collaborative learning include:

- Development of critical thinking skills;
- Co-creation of knowledge and meaning;
- Reflection; and,
- Transformative learning (Palloff & Pratt, 2005).

Wang (2007) found that collaborative learning, as outlined in a literature review, is an effective means of increasing student achievement and cognitive development. Collaborative learning strategies provide students with opportunities to learn and practice collaboration (Sandahl, 2009). While the Internet makes it possible to make lectures available to millions of students, it is more intelligently used to support learning communities socially forged via in-class environments to engage students in collaborative knowledge building (Reil & Sparks, 2009).

Cooperative learning appears to have a similar definition, but it is not the same. The key element in cooperative learning is a focus on encouraging cooperation among students rather than competition (Prince, 2004). Despite the apparent distinction in the definitions of the terms, various authors have used the terms interchangeably. The concept of learning from peers, colleagues, and team members is supported by multiple studies. Ellis and Fouts (1997) discussed cooperative learning and opined that it may be one of the most educational innovations of our time. Ellis and Fouts continued the discussion by concluding that any cooperative learning generally involves students working together in or teams to accomplish a goal. McKeanche (2002) agrees that cooperative learning methods increase student participation, interaction, and improve social skills training. Prince (2004) found broad but uneven support for collaborative, cooperative and problem-based learning as part of his overall review of active learning techniques. Yankel (2007) found through multivariate regression analysis that students taught by cooperative learning in small groups achieved greater academic performance in the form of higher exam scores.

Both collaborative and cooperative learning appear to be similar to discussions of team-based learning. Beatty et al. (2009) reviewed the benefits of team-based learning in a pathophysiology and therapeutics sequence of courses. Beatty found that team-based learning was an effective teaching methodology. In this instance, team-based learning was defined by small groups of junior practitioners working with and being mentored by more senior instructors. The participants learned from their peers and this learning was re-infused by the course design. The value of team-based learning cannot be denied (Islam et al., 2009). Islam concluded that new product development can be successful in the high-tech semiconductor industry given an emphasis on team learning. Qadir et al. (2009) discuss the benefits of peer-led team learning. They found a small but positive impact on critical thinking gains in some science courses, and improvements in grade performance and retention in science and math courses, particularly for females.

Frequently, researchers and the literature co-mingle all of these terms within the same paper. In the past twenty years, engineering educators have implemented several means of better engaging their undergraduate students, including active and cooperative learning, team learning, service learning, and problem-based learning. Smith et al. (2005) presented an overview of the various teaching approaches and discussed their benefits and limitations. Smith et al. (2005) also reviewed the use of project-based learning, case-based learning, flip teaching, and just-in-time teaching (Prince & Felder, 2005).

**ACTIVE LEARNING**

Active learning was studied by early childhood curriculum designers at the High Scope Educational Research Foundation who distilled active learning into five components - materials, manipulation, choice, language and support (Buckelew, 2000, p. 76). Translating this notion to the adult learner is thought to equate to the following:

- **Materials** = Course materials;
- **Manipulation** = Participate in hands-on, real world experiences;
- **Choice** = More than one engagement tool or mode;
- **Language** = Language that can be understood by the students minus confusing jargon and lingo; and,
- **Support** = Well-designed and supported learning environment.
In "Does Active Learning Work? A Review of the Research", author Michael Prince (2004) presents the results of a study which examines the effectiveness of active learning, defines several forms and breaks each method down into its key elements. Prince's findings are consistent with those of the authors; many different terms are used throughout the literature, and the resulting confusion often means that "...faculty regard active learning as another in a long line of educational fads" (p. 223).

The Prince study (2004) outlines the types of active learning, including breaking down each category into its key elements, in an attempt to differentiate the different approaches. Prince defines active learning as "any instructional method that engages students in the learning process" (p. 223). Active learning requires students to participate in the learning process and to think about their actions as they relate to the knowledge that is being discussed.

Prince (2004) includes discussion of collaborative learning and cooperative learning as part of the analysis of types of active learning. Prince's definition of active learning also includes discussion of "problem-based learning", which is defined as "...an instructional method where relevant problems are introduced at the beginning of the instruction cycle and used to provide the context and motivation for learning that follows" (Prince, 2004, p.223).

Multiple authors have experimented with this learning approach. Reddy (2009) used the problem-based learning approach in a political economy course. Students were required to take case studies from Southern Africa and address five generative topics on poverty and poverty reduction strategies, presented in question format. The questions drove the learning process. The learning was self-directed and paced by the students themselves.

RELATIONSHIP OF TERMS

After reviewing the different types of learning, it appears that all of the research has a common goal, which is helping faculty to further engage students in the learning process. The literature includes a number of common elements, all of which can be used by faculty to provide the building blocks for a community that fosters learning among students.

From a hierarchical standpoint, the research indicates that active learning should be designated as a category of learning techniques. Collaborative Learning, Cooperative Learning, Team Learning, and Problem-Based Learning are all types of active learning or techniques to implement active learning. There are many other techniques to enable active learning including role-play, simulations, games, and "learning by doing". Although these have not been discussed in this paper, they certainly should be considered for inclusion in future research regarding building an online virtual educational community.

Review of the research indicates that Learning Community, Communities of Inquiry, and Communities of Practice are more generalized places for learning; where instructors, students, and outside members can interact and communicate. These can represent a physical "on-ground" space or a "virtual" online space. In either instance, the community represents a manifestation of shared interest or practice. These created spaces enable more efficient active learning to take place and encourage deeper emotional linkages to the space, facilitators/moderators, peers, and other participants. In fact, the authors believe that Communities of Inquiry or Communities of Practice are each a type of Learning Community. Figure 1 presents the authors' opinion of a practical hierarchy for these terms and concepts.

![Figure 1: Learning Community and Active Learning Hierarchy.](image)

The original purpose of this research effort was to explore the construction of an online virtual learning community through the development of a framework model. This effort is still underway and will be reported in the future. For the remainder of this paper, the authors present some discussions and research related to the "virtual community". This information will be synthesized further in future studies.

VIRTUAL COMMUNITY

The term virtual learning community is relatively new and may be one type of general virtual community. There appears to be limited research on the subject and what research exists covers a wide array of interpretations ranging from a basic online community, to an actual virtual community using virtual persons or avatars (e.g., Second Life), to new developments in virtual technology which permit simulations of real places virtually. Noor (2009, p.23) implies that "virtual has come to describe something that possesses essence and effect without possessing form, something not quite physical, but with a measurable impact on the real."

How does one define a virtual learning community? A virtual learning community is a technology-based community where learners work together to "exploit or explore knowledge" (Chen, et al., p. 134). Today, Web 2.0 applications such as Facebook and MySpace are used ubiquitously in the general population, and Virtual Worlds are becoming increasingly popular in business, for example via simulations in Second Life (Dreher et al., 2009). Dreher also notes that the capacity of Virtual Worlds is underutilized in educational contexts.

Virtual communities are already being used in industry and in organizations around the globe. Cunning et al. (2009) discusses the development and maintenance of a virtual town with a virtual hospital. The virtual hospital is used to train nurses and deploying a virtual community of patients, it enhanced students' learning experience. Leimeister et al. (2009) also discuss a virtual medical community. Leimeister found that important determinants for the formation of virtual relationships within virtual
communities for patients are general internet usage intensity. Further, they reported (p. 390) that “emotional support and information exchange delivered through these virtual relationships may help patients to better cope with their illness.” With technology and computer power advancing rapidly, it should be possible to introduce actual virtual reality experiences into an online community. Today, the widespread availability of powerful processors and of broadband Internet connections has introduced large numbers of people to virtual worlds animated in 3-D and delivering advantages of communication and idea exchange not possible in the real world (Noor, 2009).

CONCLUSION AND FUTURE RESEARCH

A Learning Community is a complicated entity which should include consideration of technology, emotional attachment, collaboration/competition, and best practices for active learning. Although a virtual community is not a physical space, it has many of the same needs, requirements, and overall benefits. For education, the virtual community has to be geared towards effective learning. As noted by Henze (2009, p. 110) “learning is clearly not a spectator sport or simply downloaded from one mind to the next; it becomes an active process of communicating, discovering, organizing, and conceptualizing.”

The development of a framework model for building a virtual community for online students is a laudable goal and will be useful when completed. The research team is continuing to work on the task and will continue to report on the subject. The product or outcome of the project will be development of a new model which summarizes best teaching strategies for building a virtual learning community which effectively engages the online learner. Consideration will be given to pedagogical improvements to course design as well as maximizing the use of successful active learning techniques. The outcome will also include identification of areas for further research.

REFERENCES


INTERACTION CHARACTERISTICS

ABSTRACT

It is the emerging emphasis for researchers from every discipline to operationalize interaction. The operationalization of interactivity is seen as a fundamental and as perceived different concept in a conceptual design. User traits equal framework, the

Keywords: Inter... Inter...

INTERACTION

It is the emerging emphasis for researchers from every discipline to operationalize interaction. The revolution in communications. But what is interaction? The literature:

Guedj, tenk exhibit that...

Rogers (1995:14) ...an individual is communicating in a highly inter...

Miller (1987)

1 Sue-Jen Lin is an a...