Essential Components for Successful Virtual Learning Communities

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Abstract
Cooperative Extension and engaged universities can build on use of social learning through implementation of virtual communities of practice. This article identifies essential components of online communities of practice and the critical building blocks needed for social learning to develop. The article is part two of a three-part series on virtual communities of practice.

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This week most of us chatted with friends, called home, looked for a new product, compared prices, made a purchase, sent notes to family and friends, found program materials, located directions to the next professional meeting or vacation destination, ordered tickets, looked up a recent research article, and met colleagues. Most of these were completed with an electronic online connection and in a virtual and global environment.

While it was once believed that virtual connection was destined to be passive, we now have research findings that demonstrate the capacity to use online technology to increase social learning and build community across time zones, organizations, disciplines, and national boundaries.

Virtual Environments

Organizations, like the places we work, establish rules, policies, procedures, and levels of authority. The unique and surprising aspect of electronic learning space is there is almost an absence of organizational hierarchy and authority. In fact, Andrea Ciffolilli refers to this as "phantom authority" (Ciffolilli, 2007).

We can go any place, any time, at any speed, and on any schedule. Most of time, we have no supervisors, no requirements, no curriculum, no evaluators, and no reports. We are active as continual learners without enrollment in a seminar, lecture, course, or workshop. We cross racial, cultural, time-zone, organizational, and national barriers with the click of a mouse.

We find that Wikipedia offers a quick summary of information and concepts. Yet it is not peer reviewed by assigned authorities. We believe that this information is objective, because Wikipedia has developed a community norm that assures that contributors exhibit a neutral point of view, and over 30,000 contributors correct errors (Ciffolilli, 2007). Trust in this information changes the way we view expertise.

In our personal lives, we also join communities of interest ranging from e-Bay to online communities associated with our favorite pastimes. We have become familiar with the value of virtual opportunities for learning passively. Now we need to answer, "What about building a sense of community online?"

Community Engagement

Cooperative Extension professionals and engaged university partners are experts in creating community engagement to enable social constructivist learning while also facilitating learning in other more traditional educational classroom settings. We see evidence of this in 4-H Youth Development clubs, with Master Gardener volunteers, when agricultural producers host demonstrations of the latest practices, and when parents join forces to address important local issues like child care, joblessness, economic development, emergency preparedness, land use, or community viability.

We know from our experience and past program research that these clubs, advisory groups, and interest groups often develop into co-located communities of practice. In the 1990's, Lave and Wenger coined the term "communities of practice" (CoP) (Wenger, 1998).

They described how these communities often self-organize because of a passion to learn more about an issue or topic through collaboration with others. Communities of practice learn through social interactions as they develop a sense of identity and belonging, and may choose team actions that enable members to build on the body of knowledge to improve understanding and practice (Wenger, 2000).

Sometimes communities of practice involve university faculty, staff, and Extension educators as members, but they also learn on their own without collaboration with higher education. Co-located or face-to-face communities may also add online virtual connections, learning environments, and collaboration methods. These online tools permit greater efficiency, faster response, and continued social learning.

Virtual Communities of Practice (CoP)

This article focuses on the components of successful virtual communities of practice aspiring to employ education to improve life. The content in this article encourages and enables examination of how to build successful virtual communities of practice in Cooperative Extension and across engaged universities. It may assist higher education educators who aspire to establish meaningful engagement with new learners who will never see an Extension conference room, visit a university campus, or meet educators and faculty members in person.

Members of virtual communities of practice, like learning communities of place, enjoy learning while building a strong social structure. They establish social norms, values, and expectations (Burnett, Dickey, Kazmer, & Chudoba, 2000). They also build on social learning constructs such as:

- Learning by doing,

- Learning as experience,

- Learning as becoming, and

- Learning as belonging (Wenger, 2000).

The elements of this kind of voluntary membership in a virtual community of practice, according to Wenger (2002), include three areas.

- **Domain** is the area, discipline, issue, or topic of practice that creates the passion for shared inquiry.

- **Community** refers to the form of social relationships among members resulting in belonging, identity, trust, and engagement over time.

- **Practice** refers to the actions the community implements over time to address and build upon a body of knowledge. Practice is learning through co-creation that generates content, theory, science, cases, methods, application, and new questions or issues needing attention (Wenger, 2002).

After a careful review of the literature about virtual learning communities of practice, there are several categories where authors and researchers concur. Their findings identify critical elements for success. The most vital components are:

- Leadership,

- Negotiation of a mutually beneficial enterprise,

- Establishment of reliable technology and support,

- Building trust and respect through social engagement, and

- Maintaining strong leadership and momentum.

Leadership, Manager, or Master

Virtual communities of practice are typically initiated by a single person or small group who feel

passionately about a topic or issue they want to continue to explore. Sometimes research has referred to this position as a "leader," "manager," or "master."

Often a leader, manager, or master and a small group of founding members initiate the community of practice (Kranendonk & Kersten, 2007). They establish the community, take responsibility for creating an environment for social learning, and facilitate development of needed structure and organization to accomplish collaboration.

Unlike co-located communities of practice, leaders, managers, or masters in a virtual community of practice may build an inclusive and geographically diverse group of learners who have a passionate interest in this topic. These members are more likely to join without previously meeting each other. They are much more likely to reflect diversity across cultural, racial, educational, language, and organizational barriers.

Kranendonk and Kersten (2007) studied several communities of practice in the Netherlands that had reached midlife. One of their conclusions conflicted with the ideas of Wenger and other early writers. They found that master roles function best in communities of practice as opposed to a manager or leader. They identified three distinct masters needed:

- Master of process,

- Master of innovation, and

- Master of learning and development (Kranendonk & Kersten, 2007, p 954).

This structure of shared leadership contributed to a culture of co-leading and co-learning.

Masters, unlike managers, contribute to steering the group, but more important, they integrate into the community. Masters initially were more advanced than the rest of the community and held this special position because of competency or expertise. However, they were also observed learning by doing, belonging, and participating, thus assimilating into the CoP like other members (Kranendonk & Kersten, 2007, p 954-5).

Negotiate the Focus of the Mutual Enterprise

Members of a community of practice are first attracted because they share a passion for something they know about, but they want to interact with others to learn more (Wenger, 2002). They develop a unifying focus for learning, and they value learning that grows naturally through interaction with others.

One of the first tasks of a CoP is to articulate the focus of the practice area. Key members interested in this issue, content, problem, or body of knowledge may create the initiative, but because the community uses social learning constructs, clarifying the focus becomes a collaborative effort and is likely to be re-defined and evolve as the community grows, develops, and matures.

Establish Reliable Technology Support and Fit

Communicating virtually means community members must be able to count on the technology needed, every time it is needed, for the duration of each interaction. From the multitude of choices, it is critical for virtual community members to have compatible software, the same level of Internet access, and appropriate computer hardware. In many communities, this means access to high-speed connections and reliable service.

Most virtual communities in this decade choose software that provides a suite of communication tools. Many of these products permit development of an online library of resources and work documents, e-mail, chat, Internet access, collaborative writing, downloading of video and audio presentations, asynchronous meeting space, and synchronous audio and video meetings using PC web cams and headsets.

Video Meetings

Researchers and current practitioners find that use of video meetings is the most effective way to develop social learning online when face-to-face meetings are not possible. Current researchers and practitioners find that using video connections among their suite of communications tools contributes to development of a cohesive context within the community.

The visual link to other members of the community of practice allows members to learn with each other in order to address complex social issues. They can negotiate and create (Smith & Trayner, 2005), see each other's reactions, and reach consensus (Palmer & Speier, 1998).

Groups that fail to reach this level of community are more likely to be successful if convergence is not needed. They are more likely to fail to develop social learning beyond completion of a defined task (Palmer & Speier, 1998). For example each team member may contribute one part of a project, with little collaboration with others.

A major reason virtual communities fail to function well is unreliable technology or technology support. Team member(s) with the most restrictions for technology access and the lowest levels of online competencies often limit the options for other team members. This is one reason all members of a virtual community of practice need to develop appropriate technology skills, provide group training on new technologies to be used, purchase compatible hardware and software, and agree upon standardized access.

Choosing Technology

Beginning virtual learning community masters and initial members usually take time to learn about which electronic programs and tools work best for their community of practice focus area. They may pilot various options, receive training, and then evaluate the effectiveness to see if the suite of electronic tools facilitates the attainment of their learning outcomes.

When the community decides on electronic methods for communication, each member should be responsible for acquiring and maintaining the resources needed. They also need to have proper computer hardware, software, operational skills, and time for online collaboration.

If periodic virtual PC video meetings will link the entire team for a synchronous meeting, every team member needs a web cam of video connection, headset, high-speed access, and the skills to operate the software program. They also need to make a commitment to schedule time in order to actively engage with the group. Commitment should include time offline to work on community contributions.

If these criteria are met, the new community of practice will have addressed the technology issues, and the community can function across time zones, organizations, and disciplines. The technologies chosen must support the sociability needs of the community, the accomplishment of tasks, the expected development of tools for their practice, and creation of new knowledge (Reil & Polin, 2004).

Build Trust Through Social Engagement

Researchers stress that the most important social outcome for the virtual team or community is to develop trust. Trust is essential to the social fabric of membership. It enables learning and leads to commitment to the topic and to the membership of the group. It is created by:

- Building relationships,

- Developing identification with the mission of the community, and with the other members,

- Creating a feeling of belonging and mutual respect,

- Openly sharing learning while building on knowledge about the practice,

- Continuing to develop as a community because of meaningful engagement, and

- Developing community norms that encourage truthfulness, openness, routine collaboration, and the ability to address difficult issues or conflict.

Several researchers have debated about establishing trust and sharing ideas and solutions in virtual environments. However, they agree on the importance of trust as Nichani and Hung (2002), clearly state:

> Trust is the glue that binds the members of a community to act in a sharing and adapting manner. Without trust, members would hoard their knowledge and experience and would not go through the trouble of sharing with or learning from others (p.51).

Face-to-Face Meetings Build Trust

Without the benefit of face-to-face relationships, the literature documents that it takes much longer for virtual community of practice members to develop social capital than face-to-face communities (Wenger et al., 2002; Palmer & Speier, 1998). Most of the literature up to this point questions the effectiveness of a totally online environment. This is why many communities of practice plan for occasional face-to-face meetings and include synchronous videoconferences or PC video connections.

Nichani (2002) and Palmer and Speier (1998) suggest that video conferencing can provide improved engagement of the group. A combination of online video meetings and face-to-face collaboration with other methods of collaboration will enhance social development, group identity, social context, meaning, and trust.

Social Development and Fun

Learning and co-learning in communities of practice takes place as a social phenomenon. This can be contrasted to the traditional expert method of transmission and assimilation of knowledge.

Social collaboration and co-learning are inseparable in communities of practice (Lai, Pratt, Anderson, & Stiger, 2006). Members are likely to work on shared tasks, continually improve practices as members, and come together to "create information and knowledge, not just acquire it" (Smith & Trayner, 2005).

In a recent review of literature prepared for the New Zealand Ministry of Education, members of successful CoPs plan activities that continuously build relationships, engage members, support differences, and celebrate with fun and excitement (Lai et al., 2006). The value of the social relationship aspect of a community of practice is critical to co-learning and building trust.

Differences in Virtual vs. Face-to-face Communities of Practice

Communication styles in a virtual community of practice are likely to be limited to the structure and suite of options provided by the software programs chosen for collaboration. The organizational structure in a virtual community of practice is likely to be developed by the initial masters and creators of the community, but may change as the group matures.

Co-located face-to-face communities of practice, however, may have no electronic connection at all, and therefore, the structure can be top down or bottom up, depending on the leader's choice. Face-to-face CoP communication styles are more likely to be verbal, and options are limited by the leaders and choices made by the small group of local community members involved.

Other comparisons are shown in Table 1, modified from the literature review (Lai et al., 2006; Kranendonk & Kersten, 2007).

Table 1.
Comparison of Virtual CoPs and Co-located CoPs

	Virtual CoP	**Co-Located CoP**
Members	Open membership	Closed membership
	Dispersed geographically	Likely to be a small group
	Unlikely to have known each other prior to CoP	Likely to know each other well
	Diverse and may be large in size	Heterogeneous and usually small in size
Structure	Needs to support local and global groups of members	Needs to support local sub-groups, but is designed for evolution
	Works best for complex problems	
Masters	May start the group and become a moderator or master as well as a CoP member	Can emerge from group and take a leading role
Communication	Electronic computer assisted including video conferencing may include occasional face-to-face meetings	Face-to face options, and may be supported with technology

Maintaining Strong Leadership and Momentum

Leaders and masters of virtual communities of practice frequently take the responsibility of shaping the preliminary design of the community and its purpose. They have been found to:

- Actively recruit new people into the core group,

- Facilitate learning progress, task interdependence (Hertzel, Geister, & Konradt, 2005)

- Mentor members,

- Test technology possibilities for the group, and assure usefulness of online tools,

- Build in social relationship building components to assure continued community development,

- Monitor and evaluate progress, then share it with the members,

- identify areas for new learning expansion and evolution, and

- Keep members involved in the community with visual online or face-to-face meetings when

needed (Wenger, 2002; Wallace & Saint-Onge, 2003).

A major difference is that in successful communities of practice where trust is high and co-learning is a core value, leadership for a specific action may move around among members, based on the issues being pursued. They are more likely to practice the concept of "first among equals" described by Robert Greenleaf in his essays on servant leadership (Greenleaf, 1991).

Establishing Online Communities of Practice

The components in this article should be helpful to Extension educators and engaged university faculty members who are considering establishing a community of practice that meets primarily through online means and educators who would like to strengthen a co-located community of practice by building an online meeting environment. Overall, the research on virtual communities of practice is limited, and according to Stuckley (2004), it is untested.

Your experiences can add to the knowledge and theory guiding this form of social constructivist learning. The Web link to a mindmap of constructivism and the principles for learning may be helpful. See <http://photos1.blogger.com/blogger/3373/3128/1600/HMM_Constructivism.gif>.

The literature review report developed for the Ministry of Education in New Zealand identified six major design principles that summarize the components described in this article. Virtual communities of practice should be designed to:

- Grow naturally,

- Support sociability and participation,

- Support a diverse membership,

- Use reliable functional technology communication tools,

- Provide different roles for members, and

- Link online collaboration to offline activities (Lai et al, 2006).

Part three of this three-part series examines ways virtual communities of practice are currently enhancing educational programs and professional development.

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