Online communities of practice: Are they principled and how do they work?

Marylou Molphy
Faculty of Life and Social Sciences
Swinburne University of Technology

Catherine Pocknee
Academic Coordinator
Swinburne University of Technology

Terry Young
Academic Development & Support
Swinburne University of Technology

In 2006 the Academic Development and Support (AD&S) Unit at a Melbourne university was faced with the dilemma of providing support to an academic member of staff relocating to Brunei. This paper looks at how AD&S worked with the academic to establish an online community of practice to meet her learning and teaching needs. All three members gained invaluable knowledge and experience from participating in this venture and Wenger's seven principles of design for establishing successful communities of practice naturally evolved throughout the project. Their shared interest in online technologies allowed them to safely explore new strategies for teaching online and gave them an opportunity to come up to speed with tools such as Skype, blogs, wikis, video clips, and mp3 sound bites. The skills gained from participating in this community, and the sharing of experiences, allowed each member to confidently look beyond the group to trial and share their new knowledge and experience in a variety of new educational contexts.

Keywords: online community of practice, communication technologies, knowledge building, skype, blogs, wikis, video clips, mp3

Introduction

For many years staff in the AD&S unit at Swinburne University of Technology have been working closely with staff from the Chemistry Department to enhance teaching and learning. Many successful flexible delivery projects have been planned, developed and implemented in response to this close association. One staff member was particularly proactive in moving into online delivery and had received a University Teaching Award as well as a Carrick Teaching Citation for innovative practice in online delivery and teaching. However, in April 2006, the AD&S unit was faced with a dilemma; the chemistry staff member concerned was moving off shore to Brunei. Not only would she be required to deliver her teaching load online but academic support would need to be provided at a distance. In response to this situation the chemistry staff member, the educational development advisor and the technical support officer met to discuss opportunities, strategies and logistics. Emerging from this initial meeting was the beginnings of an online community of practice.

This paper, using an action learning participatory model of research (O'Brien, 2001; Patton, 1997) reflects on their community of practice and whether the seven principles identified by Wenger, McDermott, & Snyder (2002) as elementary to success; designed for evolution, open to dialogue between inside and outside perspectives, invite different levels of participation, develop both public and private community spaces, focus on value, combine familiarity and excitement and create a rhythm for the community, are present in their community of practice. During this reflective process they discover how overwhelmingly supportive the online environment can be in developing each members' capabilities. Although the community of practice had started as a formal work group established to undertake a specific project, it quickly matured into a social construct focused on building and sharing knowledge (Rasmussen & Wangel, 2007). Their common interest in online technologies allowed the group to safely explore new strategies for teaching online and gave them an opportunity to come up to speed with tools such as skype, blogs, wikis, video clips, and mp3 sound bites. The spin off from participating in this

community, and the sharing of experiences, allowed each member to confidently look beyond the group to trial and share their new knowledge and experience in a variety of new educational contexts.

What are communities of practice?

Community is not a new concept; it is a natural part of human behaviour and recognises the need in people to socialise and work with others (van Winkelen, 2003). Yet communities of practice are more formalised than this. Certainly, they are what van Winkelen (2003) identifies as an "emergent phenomena" but they also contain an element of design and commitment. They formalise their existence through the establishment of common goals and values and are often deliberate in their construction and seek to meet predetermined needs which have been identified by their participants.

Communities of practice are also learning environments. Hubert, Newhouse and Vestal (2001) tell us communities of practice are groups of people who come together to share and to learn from one another, both face-to-face and virtually. They are held together by a common interest in a body of knowledge, and are driven by a desire and need to share problems, experiences, insights, templates, tools and best practices. Community members deepen their knowledge and understanding by interacting on an ongoing basis. Communities of practice are fundamentally social structures which take responsibility for fostering their own learning, managing their own knowledge building and developing competencies within the group (van Winkelen, 2003). Participants become a community through 'being' a community; it is through interacting and experiencing common events that the community is created (Tosey, 1999).

> Communities of practice differ in how effective they are as learning communities. Some provide few opportunities for "legitimate peripheral practice" and thereby make it difficult for novices to gain entry and start making a worthwhile contribution to the community's work; others have many different ways for people to become involved at different levels of competence. Some blindly follow long-established traditions; others are more reflective about their own status and practices as a learning community.
>
> (Critical Methods Society, 2005)

What a successful community of practice does is share knowledge within the community, based on relationships rather than just simply on the transfer of information. Membership involves an emotional as well as an intellectual component, and the process is transformative rather than transmitted.

In the Swinburne community of practice, members were not only committed to acquiring and sharing skills amongst each other, but also gained an in-depth understanding of their fellow practitioner's unique educational context.

The Swinburne community

In the early stages of the project shared goals were discussed and established. Each member of the team had a recognised specialist skills in; technology, educational development or classroom practice. The central goal, was to build the group's skills and knowledge in new technologies in online teaching and learning contexts. To achieve this there was a mutual commitment to:

- Regular communication,
- Systematic planning of contact time,
- Time allocating for developing new technology skills,
- Enhance the knowledge and understanding of the whole community,
- Sharing knowledge and expertise, and
- Reflective practice.

Although the group shared a love of educational technology and online communication, the development of skills did not take place in an 'ad hoc' manner. The process was systematically and efficiently planned from the outset. Weekly online meetings were established and agenda items were posted to a shared blog. Group members would select a new technology for review and the technical support officer would initiate an online workshop to demonstrate and discuss its technical capabilities. In response to these sessions, the educational advisor and the teaching academic would commit to exploring the technology over the next week and reflecting on its educational and classroom potential. There was an expectation that participants would report back at the next meeting on ease of use and educational applicability.

Online communication became the cornerstone of the community of practice. As an initial starting point, all three participants were setup and registered with skype, and as the team became more proficient, the technologies trialled were absorbed into the community of practice. Skype, blogs, chat, video and email were used synchronously to build an online environment where communication tools were the key to building and sharing knowledge within the group.

Each member's professional development and progression in technical competency triggered a deeper interest in trialling new programmes and, hence, further integration of technology into the community. With time, new educational programs were identified that would provide a suitable means to promote and share educational ideas, concepts and examples. Often programs were selected to troubleshoot online issues and promote engagement. Given this natural momentum it is not unexpected that expertise was quickly transferred into teaching contexts. Table 1 outlines the technologies used to meet the community of practice's shared goals and commitments.

Table 1: Mapping of goals and commitment to technologies trialled

Goals and commitments	Technology trialled
Verbal communication	Combined use of Skype and VOIP phone
Written communication	Skype chat, blog, email, wiki document sharing
Visual communication	Skype and webcams
Systematic planning of contact time (weekly meetings)	Blog agendas
Building of new technology skills for teaching and learning contexts	Audio recording, video capture, Blackboard functionality, podcasting and screencasting
Commitment to progression	Active searching for technology that would translate CoP's ideas to teaching platforms and delivery
Sharing of examples	Blackboard community site (trial area), freeware, links to educational resources
Educational reflection on practice	Regular agenda item, blog reflections, online wiki papers
Commitment to trialling in teaching contexts	Blogs used to build a communal resource, used for teaching panel meetings and the archiving of ideas and outcomes

The educational advisors perspective

The academic advisor involved in the community of practice had an ongoing teaching role in the Graduate Certificate in Teaching and Learning in Higher Education. The subject content she taught specifically looked at marrying educational theory with emerging educational technologies. Her students were academics working within the university who were undertaking a formal qualification in teaching practice. With the experience gained from her participation in the community of practice, the academic advisor was able to enhance her delivery and teaching methods to trial an emerging technology, a blog, as a method of building a shared online resource.

The educational principles that underpinned her trial were similar to those of the social learning theorists Vygotsky, Bandura and Lave (Bandura, 1986; Lave & Wenger, 1991; Vygotsky, 1978) who claim that learning is a social construct, and learning takes place through interactions with others and the modelling of behaviour. The academic advisor used the skills and experience gained from participating in the community of practice as a model in her own delivery environment in the hope that it would in turn be adopted, adapted and reproduced (Bandura, 1986) in the classrooms of her participants.

The participants in her trial were asked to select an educational theory or concept that was current, topical and of broad interest to the university. Amongst the topics chosen covered were; experiential learning, constructivism, problem based learning, authentic learning, social constructivism and, behaviouralism. Participants were then required to set up a user profile in the university's blog, read an example posting before select a research topic and making a posting which

- provided a theoretical overview,
- identified the 5 key principles that underpinned the concept, and then
- suggested how the theory could be enacted in the classroom.

What resulted were 15 postings that covered a variety of topics or themes that were well researched and available to the whole cohort of participants. A second stage of the online activity required academic participants to comment on the differences and similarities of the topics covered and to provide further examples of the ways the nominated theories could be used in discipline contexts.

The trial identified that posting a participant's research on to the blog not only built participants theoretical knowledge but also developed a wider range of online technology skills while modelling how an online activity can be designed to replicate some of the theories that were being investigated. Evaluation surveys indicated that participants felt the task was not only educationally and theoretically sound but gave them great insight into how new technologies can be used to engage student in self directed learning.

Although relatively proficient in online educational technologies, the academic advisor was able to use the skills she had gained through her participation in the community of practice along with the specialised support that other members provided to refine, adapt and evaluate her trial. Other members not only helped in the construction and design of the activity, but provided timely feedback on its implementation and evaluation. Further evaluation is planned over the next 12 months to see if the academic participants in the trial actually used the technology in their own classroom practice.

The teaching academic's perspective

The team's commitment to improve online communication skills supported by new technologies was concomitant to understanding the difficulties and complexities involved in effective communication using written and non-face-to-face means. From the shared experience of working in an online community of practice, it seemed to naturally evolve that the teaching academic would incorporate her experiences and new found confidence into her teaching practice.

With the growing understanding of the necessity of building clear and open lines of communication evolving in the community of practice, a scientific communication group case study designed for tutorial study groups was adapted and run through the Blackboard learning platform using the Blog tool. By email invitation, students were asked to form groups of between 5 and 8 members, assign themselves a group name and register the group via email. A blog was then set up for the group's sole use and access for the length of the case study assignment. The case study was split into 3 sections requiring the group to answer questions by posting contributions individually whilst also requiring group consensus on their position.

The following constructivist instructional design philosophies of Wilson and Cole (1991) were built into the design of the case study and communication support structure :

1. Learning is embedded in a rich authentic problem-solving environment;
2. Authentic versus academic contexts for learning are provided;
3. Provisions for learner control are incorporated;
4. Errors are used as a mechanism to provide feedback on learners' understanding; and
5. Learning is embedded in social experience.

These principles were then carried through into the moderation and feedback of the case study responses.

Comments and moderation carried out by both the participants in each group and the teaching academic, reflected high levels of student participation and satisfaction with the online learning activity. The increased insight or reflective practice of the students was telling. The modified learning environment was embraced by 85% of the student cohort, significantly more than the 10% participation rates experienced in prior deliveries when discussion boards had been used. The low participation rates in discussion boards had actually triggered the proactive change in the communication medium.

The choice of a blog as the communication medium was a deliberate one in that it was used to entice and engage students into communicating via a technology more in sync with their current online social experiences and understandings of technology. As the teaching academic had discovered within the community of practice, it required 'hands on' skill, participation and experience to be able to use these communication tools when guiding and building a learning environment for others, whether it be for peers or students. The confidence and experience needed to implement this project was gained from the community of practice through trialling of software, discussion of ideas and review of curriculum development. As a group, it was rewarding to see an outcome that would have likely taken place some time away if it was not for opportunity to form a community of practice at a distance.

The technical support perspective

The technical support advisor to the community of practice found the experience an excellent method to improve knowledge and understanding of the application of new and emerging media technologies to learning and teaching in a Higher Education context. It also provided the opportunity to work closely with the academics to provide timely technological support when required. An opportunity not usually available to support staff and one which provided great insight into the difficulties that the academics faced.

From a technical support perspective, the process required the academic to identify a need or outcome which they wished to achieve technologically. The technical advisor would then suggest and demonstrate a range of possible technical solutions for the academics who would then select and experiment with one of the solutions offered and. the. The community of practice then discussed the technical success and educational design/application of the technology. A feedback cycle was built into the process to enable the community of practice to discuss, modify and reapply solutions. The resultant outcome was that both the academic teacher and academic advisor gained the confidence to apply new technologies to teaching practice and, the technical support advisor gained a first hand understanding of the difficulties faced by teaching academics in online delivery contexts.

The community of practice provided an environment where participants had the freedom to explore, make mistakes and reflect without a fear of failure. Unsuccessful trials simply became an opportunity to search for alternative solutions.

The community of practice analysed the technical solutions from three perspectives; educational application, educational design and technical success. These viewpoints provided the technical advisor with valuable insight into the real world application of emerging technology; an insight that is unavailable without using the technology in a practical application. The community of practice provided a sense of purpose and for a useful outcome. The group dynamic generated enthusiasm and motivation to seek collaborative answers.

The shared knowledge building and experiences from the group provided the technical advisor with the confidence to support other academics with similar technologies in other projects. Knowledge and experience that would not be as effective from a longer term perspective without the insights gained from the community of practice.

Outcomes

Communities of practice are voluntary and what makes them successful over a protracted period of time is their ability to generate excitement and commitment for their members (Wenger et al., 2002). They can not be designed in the traditional sense through traditional structure, systems and roles; they also need to be designed for internal direction which is both spontaneous and self directed. The Swinburne community of practice trialled Wenger's (1998; 2002) design principles:

- designed for evolution,
- open to dialogue between inside and outside perspectives,
- invite different levels of participation,
- develop both public and private community spaces,
- focus on value,
- combine familiarity, and
- excitement and create a rhythm for the community

to build an online community of practice that was not only reflective of these design principles but cognizant of the professional needs of its participants. These design principles outlined above are not simply a recipe for establishing a community of practice, but rather provide an understanding of how these design elements can work together. Designing and establishing a community of practice is more a matter of shepherding its evolution rather than creating it from scratch (Wenger et al., 2002). The ongoing design must recognise that the professional needs of the participants change and evolve over time and hence, so must the community of practice.

This has certainly been the case for the Swinburne community of practice. The participants have moved on to different roles and responsibilities within the university becoming preoccupied with other projects

and deliverables, however, they still meet on a regular basis and still support each other in the acquisition of skills and knowledge surrounding new technologies for teaching and learning.

What is perhaps most marked about this particular community of practice is, firstly, their rapid acquisition of online technology skills such as Camtasia, BBFlashbackExpress, Wink, Audacity, podcasting, screencasting, and the subsequent inclusion of these programs into their online learning environments. These media have recently been incorporated into a blog, which acts as an entry point to the online learning environment and a wiki resource repository, both of which have been linked to the Blackboard delivery platform.

Secondly, their commitment to sharing their knowledge and skills with others throughout the university via hand-ons information sessions, seminars and shared teaching roles in cross-disciplinary subjects.

Conclusion

Perhaps the greatest benefit from participating in the community of practice was the gaining of experience and confidence to undertake new educational ventures. Professional Development is often seen in terms of technical skills development at the expense of social support and shared knowledge building. Technical skills alone are not enough to sustain long term projects of this nature. What this group found was a strong need to build technical capabilities through collaborative reflection and an understanding of multiple perspectives. What was gained from participating in this community of practice was the sharing of experiences that in turn empowered each member to look beyond the group to trial their new knowledge and skills in a variety of new educational forums. The common interest in online technologies allowed the members to safely explore new strategies for teaching online and an opportunity to 'come up to speed' with emerging social tools such as Skype, blogs, wikis, video clips, and mp3 sound bites before using them with students. Having real examples to work on meant that the understanding of how a particular technology could be implemented in an online context was far more effective than simply discussing the pros and cons, and leaving the unfamiliar academic to the perils of an unsupported trial. Fellow participants in the community of practice became the safety net where participants could share their problems, experiences and insights.

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Marylou Molphy
Lecturer in Science
Faculty of Life and Social Sciences
Swinburne University, of Technology, Hawthorn,
mmolphy@swin.edu.au
Catherine Pocknee
Academic Coordinator
Swinburne University of Technology, AUSTRALIA
cpocknee@swin.edu.au
Terry Young
Coordinator, Multimedia Production & Support
Academic Development & Support
Swinburne University of Technology, AUSTRALIA
tyoung@swin.edu.au

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