

Strategies to enhance synergies between online learning communities and communities of practice

Terry Marler

School of Veterinary Nursing, Otago Polytechnic

This study examines the inter-relationship between an online learning community and workplace communities of practice as experienced by a group of 22 diploma-level students enrolled in a unit on veterinary practice management, and working in veterinary clinics. Surveys, teleconferencing and individual interviews were used to gather data on student perception of the efficacy of factors in the unit's design to promote such synergy, and workplace supervisors and colleagues were also surveyed. The results showed some variation in the views of the students concerning the complementary nature of the two communities in which they are involved, with the level of workplace support being the main factor influencing these perceptions. Aspects of the design of the learning and assessment activities were also identified as important factors contributing to the synergies between the learning community and the community of practice. These include groupwork involving constructive critique of workplace policies and procedures, assessments situated in the workplace, training of junior staff, and tangible outcomes valuable to the workplace.

Introduction

Communities of learning and practice have always developed quite spontaneously in places of education and work, but it is only relatively recently that the attention of educators has focussed on the factors promoting such a sense of community in adult learners. This paper is concerned with the identification of some of the factors beneficial to the formation of a learning community for senior veterinary nurses enrolled in the New Zealand National Diploma in Veterinary Nursing provided by Otago Polytechnic. This programme may only be commenced by experienced veterinary nurses already qualified at Certificate level, and is offered nationwide as a blended distance programme.

Senior veterinary nurses in New Zealand are often isolated from each other. They take every opportunity for networking provided by tertiary institutions, pharmaceutical companies and the New Zealand Veterinary Nursing Association. Accordingly, the development of a learning community has implications beyond any current course into continuing education and social connection.

Veterinary nurses are, almost without exception, women. They are dedicated, hard-working generalists who are poorly rewarded considering the breadth and level of responsibility which is expected of them. The National Diploma in Veterinary Nursing, offered only by distance learning, is particularly aimed at those already employed in veterinary clinics, who are typically mature with family responsibilities and unable to attend a fulltime programme. The characteristics of adult learners outlined by Knowles (1984) are apparent – the self concept is often that of a practical person rather than an academic; prior experience varies but can be quite extensive; and there is definitely a readiness for and a positive orientation to learning. However there is also, sometimes, an apprehension stemming from past schooling or simply the

length of time since study was last undertaken. Some learners may be unfamiliar with e-learning, and an orientation and induction period may be necessary for those joining the programme for the first time.

The instructional strategies employed in this programme are those of constructivist case-based problem solving, (Jonassen, 1998) including collaborative projects involving Blackboard's discussion board facility as formative assessment activities – this compulsion aspect being widely accepted as needed to ensure participation (Reushle et al, 1999). However, cognitive efficiency varies with learner styles and material to be covered (Cobb, 1997), and a diversity of media including video on CD rom, audiotapes, web-based animations and self-tests are used to stimulate interactions which satisfy the iterative dialogue of a 'conversational framework' (Laurillard, 1993) just as well as more traditional dialogues.

This paper presents a review of the relevant literature to establish the theoretical underpinning for the inter-relationship between learning communities and workplace communities, and reports the findings of a preliminary investigation into strategies to enhance synergies between these communities.

Theoretical underpinning

Participants in traditional forms of distance learning often report a sense of loneliness. The digestion of large quantities of printed material or other educational media, followed by jumping through various assessment hoops, was not particularly conducive to learning for many students. Here, almost all interaction was between the learner and the content: but this is only one of the three types of interaction described by Moore (1989) as integral to learning. However, the newer paradigm of participation in a constructivist learning environment fosters critical reflection and construction of knowledge by the learner, rather than having the teacher interpret reality and assessing the student's knowledge of that interpretation (Jonassen, 1991). It demands interaction with other learners, as well as more meaningful interaction with the tutor. The challenge for the distance educator is to provide a learning environment that will be beneficial to such interactions, and so help to form a community of learners which may gradually transform into a wider kind of community – a social one perhaps, or a community of practice.

Some of the essential elements of a community include a sense of connectedness, common interests, trust, shared values and goals, and mutual participation in decision making (Rovai, 2002). Communities form for many reasons and fulfil many functions – and every community assists its members to learn something. 'One of the lessons of postmodernism and situated cognition is that learning cannot be separated from action' (Wilson, B. and Ryder, M; undated, p.2)

Accordingly, a learning community differs from any other not because learning takes place, but because learning is the main intent of such a community; its members share a consensus that learning of a particular kind is their goal.

The advantages of learning communities may also be very practical. Decreased attrition rates reported as a result of successful learning communities (Rovai, 2002) benefit individual students, the community, and the provider institution.

The veterinary nurses described above will have a lot in common with their peers, but they will mostly be separated by geography, and to some extent by experience. Many relate better to their peers than to tutors; some will feel separated from tutors and the learning process simply because of the length of time since they were involved in formal study. Moore (1989) describes the 'transactional distance' that exists in any educational programme, but goes on to point out that distance learning demands particular attention to organisations and procedures to reduce this separation. The transactional distance between the tutor (an experienced veterinarian) and one of the students enrolled in this programme would be much less, when discussing a case on the telephone, than that between the same tutor and the chemistry tutor in the next office *for that topic*. Moore goes on to cluster the possible responses to transactional distance into two groups, dialogue and structure. The separations that do exist require design considerations both

in the maximum provision of opportunities for dialogue and in the minimum rigidity of structure, and this will influence the pedagogy and media used.

A similar, but valuably different, analysis is given by Garrison et al (2000) who describe three primary elements of a learning community as being cognitive presence, social presence and teaching presence. The first of these elements is concerned with meaning-making through discourse, and is dependent both on appropriate content for the individual learners, and the support provided to facilitate the sustained communication needed between all members of the community for learning to occur. The senior veterinary nurses in these programmes very much value the type of task that best lends itself to discussion and sharing of workplace experience and techniques. The curriculum itself, however, is nationally prescribed.

This study is particularly concerned with the elements of social presence and teaching presence, as they affect learning community formation in a very direct manner and are more easily varied to produce positive outcomes.

Social presence

The social nature of cognition has long been recognised as important in learning (Vygotsky, 1978) and such new phenomena as online discussion and weblogs have greatly increased the possibility of knowledge construction by discourse (Stacey et al, 1999). However, it cannot be denied that face-to-face discourse has the advantages of immediacy and richness in cues that computer mediated conferencing (CMC) cannot achieve. One has to work harder online to create social presence, but on the other hand, the tutor's increased awareness that is necessary in CMC may actually produce better social presence than the fortuitous classroom situation. As well, discourse without some face-to-face distractions such as appearance, race, gender, age, accent, lack of social confidence, or obvious disability may be helpful to learning rather than an impediment (Parry and Dunn, 2000). On the other hand, it has been suggested that there may be an optimal level of social presence above which learning is not enhanced. (Rourke et al, 2001).

The importance of social presence in learning communities is that it defines the degree to which a person is perceived as 'real' (Richardson and Swann, 2003). This perception may be altered when different media are used for communication – in fact, individuals may choose differing media for communication depending on the type of social presence required, not only because of the characteristics of the medium but also as a function of the enculturation of the individual with reference to the particular medium. (Gunawardena and Zittle, 1997). Text messaging originally resembled telegraphy, delivering important messages in shorthand, but is now a culturally acceptable method of social discourse from chatting and appointment-making to declarations of love. In learning communities, a sense of trust based on self-disclosure can be valuable for community formation, and can generate peer support which may motivate adult learners to persist in the face of perceived difficulty. (Ashar and Skenes, 1993). However, there can be a negative side to self-disclosure for some students, and part of the facilitator's role is to mitigate against such factors as reluctance to criticise, fear of criticism, dominance by one individual or group (Rovai, 2002). The building of online socialisation through appropriate online activities is explored by Salmon (2002) in a way that is very helpful to the practitioner by reminding us that 'the e-moderator's response at this stage is to ensure that a compatible and achieving community is built for the purpose that is intended' (p.23).

The universal need for 'connectedness', as evidenced by the huge growth in mobile phone and text messaging use, has been given some attention by researchers (Rettie, 2003). Weblogs and RSS feeds are being added to the tools used by educators to aid connectedness with students and colleagues.

Teaching presence

Constructivist learning requires educators to relinquish much of the traditional control that characterises behaviourist and cognitive approaches; nevertheless, the discourse at the heart of constructivism must be guided. Assumptions and misconceptions must be challenged, and

reflective participation must be encouraged (Anderson et al, 2001). The role of the teacher, according to these authors, falls into three main areas; the design and organisation of the learning environment, the facilitation of discourse (student-student, student-teacher, and student-content), and the provision of subject matter expertise. Anderson (2004) adds that these responsibilities may be delegated to students as a learning community develops, and the concept of a 'dynamic learning community' has been formulated to describe a further step, characterised by distributed control, commitment to the generation and sharing of new knowledge, and negotiated learning activities (Wilson and Ryder, undated).

For most online educators, however, the design responsibility remains with themselves, and it provides many opportunities to personalise the course content as one does in a face-to-face situation. The production of appropriate, high-quality learning materials in a variety of media, provision of opportunities for synchronous or asynchronous communication, and facilitation of independent study options, are all part of the instructional design brief. Subject matter expertise must be provided either by the teaching staff or by 'visiting experts', both via the learning materials and during the discourse.

Making it happen – teaching style to facilitate social presence

Before exploring the teacher's role in facilitating social presence and thus learning community development, possible impediments such as access to the required technology must be dealt with, both by the student and the provider. Otago Polytechnic uses Blackboard as its Learning Management System, but Martin Dougiamas, the creator of the Open Source system 'Moodle', claims that the software itself can support or hinder social constructivism (Dougiamas and Taylor, 2003).

The first pre-requisite to instructional design is knowing the learner, and a consideration of the range of students' ages, abilities, learning contexts, previous experience with computer conferencing, attitudes to online learning, and previous experience with constructivist models of learning will all play a part in determining the level of structure to be used. For example, the veterinary nurses enrolled in the Diploma programme are almost all mature women with Certificate-level tertiary experience. Very few of them have any experience of online learning before enrolling in this course, and most are a little apprehensive. Many of them undervalue their own experience and knowledge, and may be reluctant to share it with others. They are widely separated geographically, but will meet each other at one four-day intensive workshop each semester. The duration of the programme is five semesters.

Catering for individual differences is a challenge for all teachers, and paying attention to individual learning styles (Kolb, 1976) or learning orientations (Martinez, 2001) adds considerable complexity to the task. Experienced teachers have a repertoire of responses and scaffolding techniques which they use in the classroom, and a similar repertoire could be called into use in the online environment. Providing multiple media options in learning materials is another way to meet different learners' needs, and the Diploma in Veterinary Nursing programme employs paper-based, audio, video and interactive CD-rom material as well as online discussion.

The online component of this programme begins in the second week of the semester with introductions and resumes of work, lifestyle and hobbies, prompted by a quite structured request from the tutor, and modelled by the tutor himself. After all have contributed (about a week), a less structured but still personalised activity, such as describing a favourite holiday with links to relevant websites and possibly photographs, takes place. These activities correspond to the first two stages of Salmon's five-stage model of online learning (2002) and greatly contribute to the perception that one's fellow students are 'real', with concerns and interests like one's own. Social presence is thus well under way by week three, and the discussion proper then begins with a request from the tutor for a description of current practice in the students' own workplaces on a relatively uncontroversial topic – one in which there is a high degree of consensus across veterinary practices. A certain amount of self-disclosure is thus called for, but there should be little sense of risk involved. Feedback was provided by the tutor several times per week in the first semester under review, and at least daily in the second semester.

At about this stage there is a very important face-to-face component of the programme, with each student attending a four-day workshop, incorporating discussion, group work, presentations by current practitioners, and practical work in best-practice settings. Garrison (1997) advises that face-to-face meetings can have a beneficial effect on the modelling of social encouragement combined with pedagogical discussion, and the author has certainly found that to be the case.

Learners must be supported in the application of new knowledge to their workplace. Their veterinarian employers are almost all supportive, many actually paying the fees, and so generally new knowledge and techniques are welcomed. However, the support of other members of the learning community is very important in the early stages of contextualisation, and such support often continues well after the finish date of the learning programme.

Workplace communities

Most New Zealand veterinary clinics are small businesses with 1 to 6 nursing staff. Veterinarians are supportive of nurse education, and would assist in workplace-based training as long as their practice was not greatly disrupted. In the past, such training has occurred within the framework of tertiary institutions, but these have not been able fully to provide meaningful, authentic contexts for learning as in case-based problems situated in the real world with all of its uncertainty and complexity.

On the other hand, there has been a tendency to 'leave it to the teachers', with a perceived separation of the learning events from those situations requiring 'real work'. Distance students have opportunities every day for 'legitimate peripheral participation' (Lave and Wenger, 1991) in the skills and attitudes of veterinary clinics, but much of the situated learning organised by tertiary institutions falls into the category of 'practice fields' as described by Senge (1994), where learners can practice the kinds of activities they will be asked to perform later in the workplace. Design principles for such 'cognitive apprenticeships' have been summarised by Barab and Duffy (1998) as including:

- Engagement in domain-related practices;
- Ownership of the inquiry;
- Coaching and modelling of thinking skills;
- Opportunity for reflection.

Thoughtful learning design, however, is only part of the story, according to these authors. In communities of practice, there are other dimensions; a common culture, being a part of a larger whole (the business and its goals, in some cases the franchise group, and the wider community) and participating in a self-reproducing group that can adapt to new members and new ideas. This is more likely to occur when the student is an employee of the clinic, and the senior veterinary nurses enrolling into the diploma-level programme are often already part of their workplace community.

Communities of practice in veterinary clinics

Participation in various activities such as exchanging and interpreting information, induction and training of new or junior staff, problem-solving, developing new ideas, and promoting community identity are all essential functions within an organisation which can best be performed by groups, if an organisation is to realise its learning potential (Wenger et al, 2002). Veterinary clinics include several communities of practice based around the roles within the organisation rather than actual individuals – and a 'nursing' function can be performed by veterinarians as well as veterinary nurses. Wenger points out that 'communities of practice are important to the functioning of any organisation, but they become critical to those that recognise knowledge as a key asset' (1998, p. 5). Such communities have a repository of knowledge at their core and develop new knowledge at their boundaries by interaction with other groups – within the clinic, between clinics, and within the wider veterinary community, as well as taking a part in the local community more generally.

The learning community and the workplace community

Results of survey

The recognition of knowledge as a key asset is not a feature of all organisations, and veterinary clinics are no exception. The ‘prophet not being valued in his own land’ phenomenon also applies here – knowledge from outside may be more valued by the boss than the knowledge in front of his nose!

Student and employer perceptions of the value of the study programme were examined, as well as perceptions of the support given by the workplace. Design features of the programme (including face to face and online discussion, access to experts, and support for workplace responsibilities) and outcomes in the workplace (changes in student efficacy, changes in workplace attitudes, and benefit to the clinic) were investigated using a Likert scale of 1 (most negative) to 5 (most positive), and individual questions fell into the following groups:

Table 1: Comparison of student and employer perceptions on features of Diploma in Veterinary Nursing programme

Question group	Student perception (n=23) Average and (range)	Employer perception (n=20) Average and (range)
Value of online discussion with other students	3.57 (3-5)	3.00 (2-5)
Value of face to face Block Course	4.22 (4-5)	4.05 (3-5)
Value of access to experts	4.40 (4-5)	4.40 (4-5)
Changes in student efficacy in workplace	3.65 (3-5)	4.10 (3-5)
Changes in workplace connected with student’s learning	3.72 (3-5)	3.70 (3-5)
Overall benefit to clinic	4.13 (3-5)	4.25 (3-5)
Level of support from clinic.	2.61 (2-4)	3.50 (3-5)
Should clinic be more involved in training?	3.91 (2-5)	3.45 (2-5)

Discussion

While time and resource constraints meant that this survey is very much a preliminary ‘snapshot’, it will provide a basis for further study and for possible changes in methodology. The first impression given from a comparison between student and employer responses shows a general pattern of more positive perceptions of:

1. Benefit from the study programme on the part of the students, and
2. Benefit for the workplace on the part of the employers.

In particular, students saw the value of discussion with their peers and the value of the learning community generally more than did their employers. One employer expressed concern about confidentiality - ‘not sure about our practice being discussed with other students’ – despite all students having signed a confidentiality agreement. The inclusion of outside experts in the discussion forum was universally approved, and the face to face component of the programme was greatly valued, especially by the students.

Interestingly, the employers all rated the changes in students’ abilities in the workplace during their engagement in this programme higher than did the students themselves. Perhaps modesty prevented these pragmatic women from acknowledging their enhanced skill levels. Similarly,

employers rated the overall benefit to the clinic higher than did the students; but an even more marked difference was seen in the perceptions of support for the student while studying. Students rated this parameter as between 'little support' and 'moderate support', while their employers felt that the support they provided was between 'moderate' and 'quite a lot'. There is an obvious mismatch in expectations here which might be the result of employers' lack of information on what types of support are needed.

The last parameter surveyed, concerning level of clinic involvement in the provision of the training, showed the greatest variation in response. Some students did not feel that their clinic should be more involved in the process, while others had strong opposite views; the same variation was seen in the employers' responses. Follow-up interviews found that the more negative responses in both groups came from the same workplaces – in other words, students knew when their employer was not very interested in greater involvement, and agreed that such involvement would not be fruitful. On the other hand, about half of the clinics expressed a strong philosophical and practical commitment to greater involvement in learning.

Conclusions and suggestions for further investigation

Student and employer perceptions of the value of some design features of the National Diploma in Veterinary Nursing programme indicate a variable level of interaction of the learning and workplace communities involved. Subsequent discussions reinforced the impression that the most important factor influencing this interaction is the level of workplace support for the student, both actual and perceived. It seems that, not only does the student need support from her workplace community while studying, but she must also *feel* supported; the support must be overt.

One important factor that may interfere with synergy between the two communities is *confidentiality*. Not only should a confidentiality agreement be explicit and formal, but employers and colleagues need to know about it.

A valuable further line of inquiry might be to examine the role of involvement in the learning process of those clinics which expressed a strong interest in such participation, and how that involvement might occur. During an interview, one veterinarian spoke of forming a partnership with the learning institution to develop his workplace into a community of practice which placed knowledge at the top of its list of assets – a challenge for development which must not be ignored.

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