LEARNER SUPPORT IN NETWORKED LEARNING COMMUNITIES: OPPORTUNITIES AND CHALLENGES

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Abstract

In the last decade, universities have embraced flexible Open and Distance Learning (ODL) programs to open and cater to new markets for higher education. The ground has shifted quickly in favor of the flexibility and power of networked communications technologies to provide service to increasingly diverse and dispersed student cohorts. As a result, networked learning has emerged as an attractive option in the provision of ODL programs. In order for networked learning to be a viable long-term means of provision, it must demonstrate an ability to support learning in a sustainable way. This paper examines learner support in networked learning by identifying both opportunities for provision of high quality learner support and challenges to sustainable learner support in networked environments. In particular it examines the role of dialogue and collaboration in networked learning communities as well as the potential for networked communications infrastructure to support learning.

Introduction

Highly flexible Open and Distance Learning (ODL) programs have become increasingly important to higher education providers in the last decade. As universities vie for greater shares of increasingly competitive markets they have sought to gain competitive advantage using the flexibility of ODL to attract larger numbers of non-traditional students, including school leavers, offshore students and mature aged learners (Ryan, 2001). As part of this movement, significant numbers of higher education providers have turned to the power and flexibility of networked computer communications technologies to deliver and support ODL programs.

At the same time, the focus in educational provision has shifted from institutionally-focused *production* to client-oriented *service* (Garrison, 1997). In practical terms, this has meant emphasis on meeting the needs that all learners have because they are central to high quality learning. Thorpe (2002) has labelled this process *learner support* and it has become the central activity of contemporary ODL programs. However, diversity in student cohorts has dramatically increased the challenge of providing high quality learner support in ODL. Contemporary learning groups are both diverse and dispersed with a wide range of cultural, educational and socio-economic backgrounds represented by students located around the world.

Networked learning has emerged as one of a number of online options in the provision of flexible ODL. It arises from nearly two decades of pioneering work in online education which have re-focused ODL provision on flexibility, learner centeredness and effective use of networked communications technologies (see Steeples & Jones, 2002). However, in order to be considered viable in the long term, networked learning must demonstrate an ability to cater to the needs of diverse student groups and meet the practical demands of learner support in global education. This paper examines the potential for learner support in networked learning.

Background

Networked Learning

Networked learning combines online (networked) delivery with a participative, collaborative and situated approach to learning. The emphasis in networked learning is on connection within the networked community: connection between learners, between learners and teachers and between learners and resources (Jones & Steeples, 2002).

The *network* component of networked learning refers not only to technology, but also to particular social structures (networks) in which relationships are structured by networked logic and the accompanying notions of culture, power relations, production and experience (Castells, 1996). Networked learners rely on connections with both electronic resources (content) and people (Steeples, Jones, & Goodyear, 2002) because both are necessary for efficient and effective learning (Collins & Berge, 1996). The basic working unit within this system is the networked learning community which seeks to exploit the synergistic power of networks for learning.

The *learning* component of networked learning is informed by socially situated learning (Lave, 1997), community based models such as communities of practice (Brown & Duguid, 2000; Wenger, 1998) and collaborative learning (Garrison, 1997; Jonassen, 1999). Networked learning takes a constructivist view of knowledge and learning in which knowledge is constructed by the learner rather than one in which the learner seeks to find or discover an objective truth (see Garrison, 1993; Jonassen, Davidson, Collins, Campbell, & Bannan Haag, 1995; Jonassen, Peck, & Wilson, 1999). Within the networked learning communities, knowledge is embodied in practice, which is socially reproduced, supervised and modified over time (Brown & Duguid, 2000). Learning is viewed as a process of developing individual and shared understandings which inform changes in attitudes, beliefs, capabilities, knowledge structures and skills.

Networked learning distinguishes itself from other well known models such as e-learning and online education, although there is some common ground shared by these terms. In particular, in e-learning, the emphasis is on delivery of resources and other learning materials in electronic format. While e-learning may be delivered online or utilize a networked infrastructure, it does not do so by definition (Steeples et al., 2002). Also, networked learning is distinct from online learning in that networked learning assumes particular pedagogies, such as constructivism and constructionism, which are informed by social practices and socially based theories of learning (Jones & Steeples, 2002).

Spector (2002) has commented with regard to networked learning: "the definition of learning is not changed. Rather, what is changing is how we facilitate and support effective learning..." (p.xv).

Learner support

Traditional learner support

The term *learner support* is familiar to most distance educators. Traditionally, learner support has been viewed as a component of distance education programs which supplements the learning materials in order to help overcome problems posed by learning at a distance. To contrast distance education with face-to-face (f2f) teaching and learning, in traditional f2f higher education, particularly undergraduate education, most learning is mediated by the teacher (Laurillard, 2002). Furthermore, most of the learner support in f2f situations is tacit, and carried out informally in the activities of the teacher. That is, in f2f situations learner support exists in the person of the teacher (Ryan, 2001) and learner support is what teachers do to facilitate learning. In traditional distance education, physical distance removes the learner from direct contact with the teacher and the rest of the learning community and precludes much of the interaction that is taken for granted in f2f contexts. As a result, tacit learner support mechanisms present in f2f situations are absent in distance education and therefore formal learner support systems are needed to help learners succeed. Notably, this view of learner support is consistent with a traditional teacher-centric view of teaching and learning.

Learner support in networked learning

The convergence of distance and f2f education (Mason & Kaye, 1990), and the development of online and networked delivery systems, has led to a re-conceptualization of learner support and its place in ODL programs (Thorpe, 2002). As Kimball (2001) points out, "rather than struggling to make up for the qualities distance programs are perceived to lack when compared to traditional classrooms, faculty members who are most successful with distance technologies see them as

actually providing some qualitative advantages" (p. 1). With emphasis on community, connection, and interaction, learner support in networked learning has shifted away from a systems-based industrial model of support, to a learner-centred view which is consistent with the constructivist and other socially situated pedagogies that feature prominently in networked learning (Ryan, 2001). While a traditional view of learner support places the responsibility for learner support in the hands of teachers and other specialist support staff, networked learning seeks to provide support in the workings of learning communities and infrastructure which sustains them. It places greater responsibility for learner support in the hands of participants in the learning community.

Functional elements of learner support

Based the views of learning and learner support posited above, learner support seeks to meet learners' needs in the process of meaning-making and use the understandings which result to inform changes in their knowledge structures, attitudes, beliefs and skill sets.

Thorpe (2002) has identified *response* as the functional essence of learner support and *identity*, *interaction* and *tim*e as the key elements of meaningful response. Identity informs the support process and allows for personalization of support for individual and shared meaning making. As such, high quality learner support is culturally sensitive and responsive to changing identities. Interaction provides two-way communication and allows for feedback in activity. Interaction allows support to be conveyed in the terms that the learners choose to express themselves which contributes to comprehensibility and individual meaning making. Finally, time is significant because learning is a demand driven process and timely support adds

meaning for individuals by providing responses when they are needed (Brown & Duguid, 2000).

Opportunities for learner support

Socially situated support

The most obvious opportunities for learner support in networked learning are in its ability to connect members of the learning community and allow them to interact. In doing so, networked learning systems cater not only to educational activities which promote organized formal learning, but they also cater to natural (non-educational) learning which occurs informally and incidentally whenever people interact (Fox, 2002). Learning occurs not only as a result of direct participation in learning tasks, but also through legitimate peripheral participation in communities (Lave, 1997) in which implicit and explicit knowledge is 'stolen' from the community (Brown & Duguid, 2000). Therefore, networked learning provides a broader range of learner supports which are potentially much richer than traditional learning approaches. In particular, networked learning communities provide socially situated learner support through the active processes of *dialogue* and *collaboration* which drive learning in social settings.

Dialogue

In their extensive literature review, Coomy and Stephenson (2001) identified dialogue as a key component of best practice in networked delivery. Dialogue drives learning by aiding in the conceptualization, construction and application of knowledge (Mayes, 2001). In conceptualization, dialogue makes content cognitively accessible by making tacit knowledge explicit and so learners are able to comprehend, manipulate and integrate it into their personal knowledge structures (Mayes, Dineen,

McKendree, & Lee, 2002). Learning results as a by-product of comprehension as knowledge is constructed in the performance of tasks which draw on domain-specific knowledge. Furthermore, dialogue allows knowledge to be fine-tuned as subjective knowledge structures are externalized, interrogated, explained, negotiated, and refined. Resulting learning may be vicarious through observation of dialogue (Mayes et al., 2002), constructive through direct participation or reflective through self-regulation and reflection in action of the knower (Hung & Chen, 2001).

Dialogue also develops context and allows learning to be situated. Context provides a foundation for the construction (Mayes, 2001) and co-construction (Goodyear, 2002) of knowledge. By making participants' assumptions explicit and providing opportunities for confirmation or refutation of these assumptions, dialogue creates an alignment of assumptions and a context for shared understanding. This alignment is critical not only to learning but also to the development of learning communities and the development of learner-centric learning environments (Hase & Ellis, 2001). Through the combination of situatedness (context) and social activity, learners pick up both implicit and explicit knowledge (Hung & Chen, 2001).

Furthermore, dialogue promotes the development of identity, which is central to learner support. Indeed, some authors have argued that *learning is identity development* (see Brown & Duguid, 2000; Mayes, 2001; Wenger, 1998). In interpersonal exchanges, participants choose words and make statements which identify them and develop their identities within learning communities (Hodgson, 2002). Members of the learning community associate ideas as with particular individuals and utilize relevant contributions from the community. Learning is supported as interdependency develops and learners are able to identify and make use of the strengths of the learning community as well as develop their own professional

identities through the appropriation of knowledge, values and beliefs which characterize expert practitioners (Hung & Chen, 2001).

Finally, dialogue supports learning by developing learning skills (Goodyear, 2002) and the expert practice of learning (Hung & Chen, 2001) within learning communities. Dialogue allows patterns of thought to be articulated, examined critically and integrated into knowledge structures. Learners with particular ways of thinking or ways of viewing the world are exposed to new ideas and develop new procedures for making meaning (Goodyear, 2002). Participants develop 'ways of seeing' the world and learn to manage understandings that emerge from different patterns of thought (Hung & Chen, 2001). This process cultivates the ability to recognize, appreciate and adopt different ways of thinking and it supports learning by helping participants become expert learners through the development of epistemic fluency (Goodyear, 2002). Learners develop expertise in the practice of learning.

Collaboration

Collaboration supports learning by providing a means to distribute and co-ordinate a variety of tasks and activities. Rather than bear the load of negotiating the learning process alone, learners draw on the energies and abilities of the group to attain the goal. Through the combined efforts of the group, complex problems can be represented and understood. Also, complex processes can be managed by the distributing the component tasks. The cognitive load associated with complex problem solving can be shared amongst the group to avoid redundant work and optimize the skills and knowledge within the group (Goodyear, 2002).

Collaboration also creates opportunities for knowledge construction and refinement through articulation, conflict and co-construction of meaning (Hammond, Trapp, & Bennett, 2002; Mayes, 2001). In networked learning, learners are placed in

collaborative situations where interactions stimulate conflict, explanation, internalization and a variety of other mechanisms to create cognitive change effects. Aided by the benefits of dialogue, collaborative participants go through a cycle of externalization, sharing, critique, refinement and internalization. As the process continues, shared understandings emerge and knowledge is co-constructed as a product (Goodyear, 2002).

As Ryan (2001) points out, collaborative activity addresses one of the most common learner complaints: the loneliness of the long distance student. In networked learning, it provides motivational learner support by addressing the needs of all human beings to be a part of a group, to socialize and to belong. Collaboration implies involvement in and engagement with an activity. Ideally, this involves a level of absorption into the activities of the learning community which includes concentrated effort, interaction, challenge, feedback and learner control (Coomy & Stephenson, 2001) which contribute to a sense of commonality and interdependence in the learning community (Hung & Chen, 2001).

In terms of explicit learner support activities, collaborative learning communities allow tutors to participate as co-learners and play mentoring roles in the development of expertise and knowledge-in-practice within the communities (Hung & Chen, 2001). Tutors are able to exploit the richness and diversity of such groups by acknowledging the legitimacy of the participants' experiences and integrating them into learning activities while helping learners connect their sometimes idiosyncratic interests with more general themes of the courses under study (Mandell & Herman, 1996). Tutors as co-participants are able to play the important role of 'more capable peers' in learning communities and they support learning by extending learners Zones of Proximal Development (Hung & Chen, 2001). While these activities may signal a

role change for teaching staff, they preserve the learner-centric nature of networked

learning while providing powerful learner support mechanisms.

Infrastructural supports

With the convergence of computer and communications technologies over the last

twenty years, networked computing now provides high degrees of interactivity,

flexibility and customizability in the provision of educational programs and services.

The technology allows learner support to be integrated, seamless and user driven in

networked learning (Miller, 1996). In this context, the use of the term *infrastructure*

refers not only to the capabilities of the technology to support learning, but also the

ways it is applied to support the activities of networked learning communities. Hung

and Chen (2001) have identified three dimensions of infrastructure which helps create

and sustain vibrant networked communities and structures the support activities they

provide. These include rules and processes; accountability mechanisms; and

facilitating structures.

Rules and processes

Any community is organized by its rules and processes for engaging in tasks and

activities. These rules structure the practice of the community and help define its

culture (Brown & Duguid, 2000). Ideally, they are established though negotiation and

consensus building within the community and the history of their relationships (Hung

& Chen, 2001).

In networked learning communities, these rules and processes guide and support

the practice of learning by defining roles of participants and structuring the operation

of these communities. The combination of networked communications technologies

and *networked logic* (Castells, 1996) allows individuals to have a distinct voice in

networked communities and facilitates the development of rules and processes

democratically. In this way, networked learning attempts to approach the ideal of education which is driven by learner needs and focused on meeting those needs (Hase & Ellis, 2001).

Accountability Mechanisms

Accountability mechanisms help communities regulate themselves and ensure effective practice. Where the practice of networked learning communities is learning, accountability is focused on ensuring that learning is effective. Networked computer technologies create robust accountability mechanisms in network learning communities by allowing all members to monitor tasks performed within the community (Hung & Chen, 2001). Accountability in this context is highly democratic and learner-centred. The implication of this for learner support is that learning communities can become self regulating and, to a degree, self supporting with accountability driven by participants (learners) rather than external parties.

Facilitating structures

Facilitating structures make the operation of communities possible. In networked learning, these structures include the web space within which the community operates and the information architecture of the network (Hung & Chen, 2001). These structures support learning through the mechanisms of *co-ordination, control* and *communication* (Ganesan, Edmonds, & Spector, 2002).

Co-ordination focuses learners' efforts on meaning making and knowledge construction. Networked computer technologies allow learning communities to consistently and comprehensibly represent themselves in an integrated platforms which provide a sense of place and allow participants to focus on activity and practice. The platforms also provide opportunities for integrating more automated administrative supports which make platforms more learner-centred. Mechanisms

such as digital drop boxes, online grade books and feedback generating bots help make administrative functions more transparent to users and add flexibility and user control to administrative functions. Additionally, the technological infrastructure provides a means to manage the intense interactions and activity that take place within vibrant learning communities (Hung & Chen, 2001). Intelligent agents (bots), advance organizers and electronic tools which organize collaborative activities help learners manage learning programs (Steeples et al., 2002). Other systems such as content managers allow increasing learner control and customization in the learning environment, which creates meaningful context for learning.

Facilitation structures also provide necessary control in networked learning environments. While it may seem undesirable to create an environment which is *controlled*, control is necessary from cognitive, management and technological points of view (Ganesan et al., 2002) in order to help participants organize, manipulate and make sense of activity in communities. Control in networked learning is significantly different that in other learning environments because it the technology allows control to be handed over to the community itself. This allows the activity of the community to be driven by and focused on meeting learner needs.

The computer mediated communications (CMC) facilities inherent to networked learning infrastructure play a central role in learner support in networked learning by making communication flexible, timely and convenient. These attributes afford community members control over communicative exchanges that underpin the socially situated learner supports discussed above. Furthermore, when combined with the notion of control, CMC provides excellent opportunities for learners to negotiate learning objectives and assessments, thereby extending their control of the learning programs and moving programs toward the ideal of learner directed learning

(Hase & Ellis, 2001). Also, CMC has improved learner support by extending the reach of learner support services (Miller, 1996) and improving access to resources (Levy, 2002).

Challenges

Despite the potential for high quality learner support identified above, educators in networked environments have identified a number of practical problems with learner support in networked learning environments including frustration and anxiety with working with online environments, unfamiliar role expectations for all participants and cost associated with networked delivery. These will need to be considered carefully to inform improvement in networked learning programs.

Frustration and Anxiety

Somewhat ironically, while socially situated pedagogies provide numerous opportunities for learner support, they also cause a great deal of learner anxiety. Learners report being frustrated with collaborative processes (Hara & Kling, 2000), anxious over collaborative contributions and collaborative assessment work (Trehan & Reynolds, 2002) and uneasy about the dynamics of relationships which are formed in networked learning communities (Crook, 2002). While collaboration and other interactive approaches provide opportunities to support learning, Hase and Ellis (2001) have found that they may also have negative effects on learner attitudes toward the learning environment and socially situated approaches to learning.

Additionally, the dominance of text in networked environments places new demands on learners and contributes to frustration. Communicating well in writing is a complex skill and networked learning requires mastering the genres of not only academic assignments and reports, but also e-mails, discussion posting and online

chat. The demand for new skills and frustration or anxiety associated with steep learning curves may cause some learners to revert to traditional print-based education (Hase & Ellis, 2001). In response to this issue, it may be necessary to provide additional learning resources with a specific focus on written communication.

Finally, despite the promise of networks to provide better access to information and resources, learners have identified locating and accessing online resources as a time consuming and frustrating process. In order to address this issue, institutions and individual teachers have taken to prescribing set lists of resources, many of which can be hosted by the institution. However, this undermines the development of independent and autonomous learners and is an example of providers re-asserting control over access to information (Hase & Ellis, 2001).

In order to address these issues, instructional designers and teaching staff for networked courses may have to adjust their expectations of learner skills bases in networked learning environments. For many learners venturing into online study, a culture of networked learning based on learner centeredness, collaboration and text-only interaction is a major departure from their experiences with the placed-based teacher centric world of traditional education (Garrison, 1997). In addition to domain specific content, courses may need to include materials and activities which support the development of skills related to collaborative work (Hung & Chen, 2001; Stephenson, 2001), group dynamics (Conrad, 2002) and the cultivation of online social presence (Swan, 2002) in order to overcome any negative effects of being suddenly immersed in a text-only collaborative online environment. Also, networked learning courses will need to cultivate and support skills related to the use of online environments including sourcing and evaluating information and communication in text-only environments (Levy, 2002).

New roles for participants

Operation in networked learning communities has changed role and responsibility expectations for both learners and teaching staff. Teaching staff have been asked to give up authority and control over many aspects of the learning programs. Their roles have changed from that of provider and controller of information to mentor and facilitator in the learning process. Distinctions have emerged which classify teachers as information (subject matter) or learning specialists (Mandell & Herman, 1996) and their place in courses has moved from centre stage, to one of co-participant (Collins & Berge, 1996). On the other hand, learners are being asked to take more responsibility in learning programs. Not only are they expected to engage as active participants in dynamic and labour-intensive processes, but they are asked to assume greater control of their learning and the learning of the group in the activity of the networked learning community.

These role changes have created significant conflicts for learners, teachers and administrators in the provision of learner support. Learners' uncertainty about roles and unfamiliarity with learner-centred approaches causes anxiety and distracts from learning. Administrators' reliance on structure, systems and traditional notions of control and authority perpetuate inflexibility in dealing with the dynamic and fluid nature of networked learning. Meanwhile teaching staff are caught in a bind between the institutional need for accountability and academic standards and the learners' needs for responsive support in a democratic learner-directed environment (Trehan & Reynolds, 2002).

Clear and distinct role expectations are at the heart of high quality learner support (Coomy & Stephenson, 2001). As Hase and Ellis (2001) have pointed out, what is needed is an alignment of expectations with regard to roles and responsibilities in

networked learning so that participants can proceed with a shared understanding of the nature and scope of their activities in the system. All institutional stakeholders (designers, developers, teaching staff, tutors and administrators) need to be clear about role expectations before courses go to offer and these expectations need to be conveyed clearly to learners. Likewise, learners need to communicate their expectations for the course in-process and provide feedback to inform further development of course materials, facilitation techniques and roles for all participants. In order to achieve alignment of expectations, there must be open channels of communication between stakeholders as well as explicit discussion of roles and responsibilities.

Costs

According to Ash and Bascish (2002), the cost of learner support may be the biggest and most under appreciated cost in networked learning. High quality learner support in networked learning requires significant cost in time, money and other resources not only for institutions, but for individual teaching staff and learners as well. Institutional costs include development of the networked infrastructure, technical support, training to up-skill technical and teaching staff and provision of network access. Individual teaching staff costs include high time commitment for course development and maintenance and well as significantly increased costs for student contact and support, some of which goes unrecognized by providers. For students, the costs related to personal expense for computer hardware and software, printing costs and time costs associated with higher levels of interaction within networked learning communities. For all parties involved there are also hidden costs of down time in the network and front-end costs associated with implementing new systems.

For networked learning to be viable in the longer term, these costs must be recognized and calculated meaningfully in order to inform the development of sustainable systems for provision and support of networked learning. As networked learning implies a departure from both traditional f2f education provision and industrial models of distance education provision, previously used methods for calculating costs may not be applicable to networked delivery. There needs to be a reconceptualization of costs in term of labour, technology, infrastructure, time (including downtime), professional development and intellectual property in networked learning environments as these systems require activities which are both qualitatively and quantitatively different from traditional education contexts.

Conclusion

Networked learning offers a mixed bag in terms of meeting learners' needs in high quality ODL programs. The combination of socially situated pedagogy and networked community infrastructure creates numerous opportunities for learner support in networked learning communities. Support is provided explicitly in the activities of the teaching staff, but is also provided tacitly in the workings of the learning community and the mechanisms inherent to the networked infrastructure. Significantly, these supports are more learner-centred than traditional learner support structures and show promise for the development of more democratic learning environments. From this perspective, networked learning would seem to have some advantages over other provision models.

On the other hand, opportunities for learner support do not mean that the ideal of meeting the needs of all learners have been achieved. Clearly, there are a number of unresolved issues related to this relatively new form of provision including frustration and anxiety that have resulted directly from the use of technology in networked

environments, uncertainty about how to operate in these environments and a combination of unknown and unforseen costs for all stakeholders associated with networked delivery.

If networked learning is to be considered viable in the long term, further research is needed to explore the potential of networked learning to support learning. Such research should focus not only on the positives of community based learner-centric learner support, but also catalogue the problems associated with this form of education provision and bring these problems to light. Only with more information about learners needs and how they are not being met can we improve learner support in these environments and make judgements about a sustainable future for networked learning.

(4645 words)

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