Community Informatics—A Role in Emancipatory Learning in Distance Education

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INTRODUCTION

It is well documented that the use of Information Communication Technologies (ICT) in the context of teaching and learning can increase the possible use of a greater range of teaching and learning options for on-campus and distance education modes of course presentations, through open learning, online and resource based learning etc. Furthermore, in the provision of distance education the use of learning centres, small groups or individuals can bring new learning opportunities into local community advantage. This can assist in the development to 'learning communities' by widening access in local communities to eduction and training opportunities, increasing interpretation of knowledge in a local context and supporting existing educational systems (Longworth,1999).

The use of ICT by regional (territorial) communities as a technology strategy or discipline is defined in this paper as "community informatics"(CI). As indicated by Gurstein (2000), CI can link ICT at the community level with emerging opportunities in community development and life long learning. As such, this term brings together the concepts of ICT and that of community development based on individual growth within a framework of shared learning, sharing experience across cultural and geographic boundaries and interpreting information from within a community context to create applicable knowledge.

In conjunction with the developments in the use of ICT to improve equity of access for distance education there has also been an increasing realisation of the need for educational institutions to provide a leadership role in society for democratic process and to address issues of equity (Harkavy, 1998).

This paper addresses role of online approaches for distance education from a theoretical stance. It exposes the dangers of unitary approaches that the use of ICT can promote and outlines an approach, which can assist local communities benefit from a wider interpretation of knowledge available through online distance education.

THE ONLINE CONTEXT OF COURSE PRESENTATION

While less than a decade ago, most teaching and learning was made available through face-to-face contact and the use of print, there is now a myriad of options for teaching and student learning using media such as videoconferencing, audio-conferencing, the Internet, email and CD-Rom etc.

Despite this, online processes of education are often seen as an adjunct to current practises with the teacher/tutor as the 'expert'. Nevertheless, there is also an emerging literature on ways that video conferencing can support distance education and how online chat groups can be used to support learning (see for example Kelly and Shing Ha, 1998; Tsang and Fong, 1998).

A current tension within the provision of education, is that a framework for the presentation of online distance education is evolving that may limit potential benefits of ICT by trying to fit the technology to traditional practise rather use the technology to develop new approaches. For example, critical theory has contended since the 1930's that the values associated with technicism and instrumental rationality have increasingly and destructively dominated education in modernity (Agger, 1991; Held, 1980). From this perspective there then develops an overly goal orientated approach in both organisations and individuals. (Gorry and Scott-Morton, 1971; Dryzek, 1990). This goal-oriented approach can create a "tunnel vision" that may be blinding to alternative approaches (Williams and Duczynski, 2000). Foremost in these goal seeking approaches is a unitary vision of an organisation where society is perceived as an integrated whole with the interests of the individual, the organisation and society as synonymous. (Falconer, Castleman, Mackay, and Altmann, 2000). The limitations of such above mentioned pardigms become even more apparent in a multicultural environment.

In the above context, Habermas (1984) provides a foundation for scrutinising the foregoing practises through communicative action, which balances instrumental rationality and technicism (White, 1988). Following such an approach, *discourse* would allow lecturers, tutors and students to disclose their worldview orientations relevant to the subject matter. This communication is "progressively less distorted by socially oppressive, asymmetrical relations of power" (Alvesson and Willmott, 1992).

THE LEARNING INTERACTION

As alluded to above, a critical aspect in the development of learning communities is that people develop skills in self-directed and for group learning In this context student/lecturer interaction can be described in three categories, 'one to one', 'one to many' and 'many to many' (Romm and Taylor, 2000). The focus in both 'face to face' teaching/ learning settings and in distance education has been on the 'one to many' mode where the lecturer/tutor shares knowledge with many students in a 'expert' to a 'learner' paradigm which reinforces the unitary view of rationality. This approach lends itself to a power relationship, which is at odds with the Habermasian view of communicative action (Habermas, 1984). In this situation, there is no automatic gravitation to a shared discourse where the context of the learning from different world-views is shared and apparent. Even in the 'one to one' mode there is often the assumption of rationality and an 'expert-to-learner' paradigm.

The 'many to many' mode is not as frequently used in either the traditional distance education or the online approaches to teaching. Even when this mode is practised, it is more than likely to be seen as a parallel process to the traditional view of *real* teaching (Romm and Taylor, 2001).

Despite the foregoing, a major and continuing influence of ICT in education has been to cause a paradigm shift from a teacher-directed model to a group based learning model as shown in Table 1 (UNESCO, 1998).

The extent to which the above mentioned learning environments and education models can be used for distance education students depends on a number of variables including geographical location, student learning style, availability and access to ICT, as well as and cost factors (Watkins and Biggs, 1996).

Table 1: Successive education models

Model	Focus	Role of Student	Technology
Traditional	Teacher	Passive	Blackboard/ TV/ Radio
Information	Student	Active	PC & AV
Knowledge	Group	Adaptive	PC & Network & AV

As mentioned above, online distance education courses can take many approaches and include new forms of interaction that involve learners in open discourse providing increased contextual and emancipatory dimensions. In the provision of a distance education, new approaches can involve an open discourse approach as a part of the delivery mechanism. Such an approach can also address issues of differences in understanding brought about by cultural diversity.

AN ONLINE TEACHING MODEL FOR DISTANCE EDUCATION

A number of approaches (methodologies) have been reported for the delivery of online courses in the above mentioned literature. This section describes and explains the benefits of an online course devised by Romm and Taylor (2000) that provides opportunities for learners in meeting a range of individual and group learning needs. The on-line course is for distance education students and has been trialled for a number of courses at both the postgraduate and undergraduate levels and uses 'one to many', 'one to one' and 'many to many' forms of interaction with students.

The instructional materials for this course (irrespective of what area is being taught) include: a video which contains detailed explanations on how the course functions; a Course Outline which provides necessary student information about the course eg the study schedule, assignment and exam requirements, contact persons etc. This document is available on line as part of the course's Web site and is also available to the students on a CD ROM or as a hard copy; a textbook; and a class e-mail list.

Students are expected to subscribe electronically to the class e-mail list. They are then encouraged by the lecturer to introduce themselves to the class on-line by informing the group something about themselves, their interests, their current work or study areas and their backgrounds. This helps to contextualise the backgrounds of the class members and hence provides a framework for discussion, interpretation and linking across the group. This process also provides information that allows the lecturer to divide the class into weekly presentation groups. Where possible the allocation allows people of diverse backgrounds to be brought together into vibrant but cohesive groups. The allocation to groups is completed by the second week of the semester. By this time, students are expected to establish contact with their virtual group members and start working on their assessment tasks. This time is also used to seek out incompatibilities in the groups, try to resolve any conflicts and help people to learn to work together. Whist reallocation across groups is available during this initial time, it is only used as a last resort when it is obvious that it is necessary in order to achieve a cohesive team effort. Any traditional cultural or ethnic differences are treated with immediate sensitivity. On week 3 of the semester, the first group makes its presentation to the class on-line. The presentation consists of an article (which the students have to enclose, attach, or simply establish a hyper-link to) and a critique that links the article with the reading in the book for the week.

Feedback from students contributes to the mark for the presentation. The above process is repeated for ten weeks until the end of the semester, with each week dedicated to an in-depth discussion on a different topic that is related to the reading for that week.

The major advantages of the model are as follows:

It Involves the Three Modes of Teacher-Student Interaction

Students have interaction with the teacher in the traditional 'one to many' mode when they interact with the course material and the lecturer in normal post and electronic interactions. Students have the immediate possibility of 'one to one' interaction with the lecturer by mail, telephone or email for points of clarification or detailed discussion. However, the bulk of the interaction is through the 'many to many' mode where students interact through their groups in the development of their presentations to the class and in commenting on other group presentations.

The process of having students interacting within groups off the class e-mail list means that the class e-mail list does not get flooded primary discourse. It is only the group position, which ends up on the class e-mail list. However, this does not prevent individuals presenting their perspectives as a component of the group contribution and in the end all views are captured in the presentations. The model provides the opportunity for individuals who feel disadvantaged in the group process to interact directly with the lecturer who acts a moderator. There is also the opportunity for group members to raise the issue of non-participation of individual group members with the lecturer. As the interactions are all online, participation is verifiable from the electronic log.

It Provides Flexibility for Lecturer and Learner

Supplementary readings are chosen by the students to allow contextualisation of the material and to increase discourse around different world-views. Hence it supports the concepts of Communicative Action as proposed by Habermas (1984) to address the issues of technical, instrumental and bureaucratic rationality. Temporal effort is negotiated within groups and this allows the pressures of modern life to be accommodated. All of these negotiations are carried out within the group and the lecturer is only involved as a last resort. This process also addresses the criticism directed at unitary organisational approaches, which fail to recognise power, politics and conflict. This process embeds the concepts of plurality, which recognise different worldviews. The approach also provides flexibility for the lecturer in that the weekly assessments can be conducted online from any physical location with Internet access. The model also helps address the increasing issue of text currency as increasing volumes of textbook and application information is produced and becomes easily accessible. As well as this, the model ensures that the work for the lecturer is the same regardless of class size.

It Allows for Increasing Understanding Across Cultural Groupings

Because the students are geographically isolated within groups, meaning is negotiated every week within the context of the subject matter. This ensures that different ethnic backgrounds can be more easily accommodated in the learning process. The process of discussing meaning of applications allows the terminology to be contextualised and shared meaning to be developed within the learning subgroup and subsequently within the whole class group.

It Accommodates Regular and Timely Asynchronous Interaction

Whilst asynchronicity has been a component of traditional distance learning for sometime, some online approaches have in fact provided pressure for synchronous availability of student and lecturer. This is often out of step with modern requirements, which need to accommodate different time zones, employment status, family commitments etc.

It Mitigates Issues of Power and Social Presence

Social presence has been found to be an inhibitor to communication, understanding and learning. Personal salience moulds interaction and filters out messages and meaning (Daft and Lengel, 1986; Culnan and Markus, 1987). Social presence also fundamentally affects how participants sense emotion, intimacy and immediacy and depends not only on the words people speak but also on the verbal and nonverbal cues, body language and context (Rice 1993). Social presence is also ethnically heterogeneous. In researching online groups, Wellman et al. (1993) have found that limiting social presence is a factor in removing inhibition, increasing creativeness and strengthening weak social ties in narrowly focused groups such as learning groups. Hence the non-video based online medium is likely to increase learning outcomes across class, culture, gender and age.

It Strengthens Both Hard and Soft Skills

As discussed above, a pluralist approach is being posited as a more appropriate mechanism for learning and living in an increasingly globalising world. Hence, there is a need for education to provide skills, which suit such an environment. The model outlined here, not only provides content and the ability to contextualise this across a range of situations and cultures, but it also provides training in processes which facilitate increased learning through collaboration, discourse and different world –views. Students learn important on-line skills, how to be citizens of an on-line community, and how to contribute to a virtual team, including dividing the work between the team members, resolving conflicts, developing ideas and projects, and providing positive feedback to others about their work.

DISCUSSION

This paper started out with the proposition that a wider participatory approach being advocated for service delivery in organisational management has application in distance education. An underlying theme developed through the paper suggests that new ICT based approaches can provide substantive advantage for DE because they can substantive advantages for course and help liberate educational processes from the domination of unitary approaches. These unitary approaches, often been justified in terms of order, quality and management are now being increasingly used to equip individuals, organisations and communities to deal with the increasing complexity of information availability brought about by information communication technology itself.

The approach outlined in the online teaching model presented above, provides a mechanism for a wider engagement in, and interpretation of, the learning process through use of ICT which reduce the negative impact social presence, increases the use of weak ties in the learning process and provides a degree of anonymity to increase contribution. It recognises the reality of power relationships, politics and conflict in the learning process and brings them into the process rather than ignoring their existence. Thus, the approach also develops skills, which are becoming increasingly important in the application of knowledge and learning in a community setting. It encourages a pluralistic interpretation, which allows learning to be discussed, and locally contextualised across wide variations in culture and experience. As such, it provides a structure and opportunity for communities to engage in learning in new ways and provides much more than a new service delivery option for DE. It is important to recognise the potential for centrality and lack of reality associated with ICT. However, a CI approach to distance eduction allows individuals, groups of individuals and communities to '*live an ongoing learning experience*' and to locally apply and interpret learning from outside their immediate constructs. In this sense, the application of CI recognises the dynamics of structuration which occurs when non-passive actors interact with institutional structures and which provides the interactions for changes in structure and processes for the delivery of products and services (Giddens,1991; Orlikowsky, 1992).

This iterative process of sharing the interpretation of information and its local application in a forum of learners involving a range of cultural understanding can obviously provide for better understanding and educational outcomes.

But the learning model discussed above also provides for:
• Greater understanding across cultures, because geography and place do not restrict the process.
• A better focus on applications from the learning.
• A wider network of relationships in weak tie networks which have been demonstrated to provide increased understanding and community benefit
• A mechanism for participative change in the content and process of service delivery to keep it temporally and situationally relevant, and
• A means to extend learning into a community development context.

From the foregoing it is clear that the delivery of useful Community Informatics outcomes for DE, requires centres and models to ensure that the community is engaged across all of its components to support life long learning and to develop learning communities. The experiences discussed in this paper need to be further refined through more formal evaluation. The authors are involved with the Rockhampton based community informatics centre- the COIN (Community Informatics) Internet Academy that has the development of evaluative models and the definition of impediments to their adoption as its major objectives.

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