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## 22. Modeling Community Building Through Working Online

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**Abstract.** The University of Hong Kong provides on-going education for teachers and education professionals within the Faculty of Education through a Masters degree in Information Technology in Education or MSc[ITE]. The MSc[ITE] offers a flexible modular structure enabling students to progress according to their own pace. The course is delivered in a face-to-face mode supplemented by an online course room - Interactive Learning Network (ILN) which supports collaborative learning. ILN is a community-building environment designed to scaffold virtual education communities of practice where teachers and students work together as teams and engage in reflective, collegial patterns of work. ILN facilitates cognitive and social scaffolding, enabling participants to become progressively more involved in the community and to sustain their commitment and interests. This environment is designed to support programmes that rely on pedagogies that emphasize the emergence and growth of autonomous collaborative learning, rather than teacher-directed delivery of learning materials. This paper describes and analyses community building online in the foundation module for the MSc[ITE] and introduces models to assist in the design and evaluation of online learning communities.

**Keywords:** online community building, modeling practice, technology integration

### 1. Introduction

Widespread access to online learning facilities in schools in Hong Kong has stimulated debate about the potential for new and extended conditions for learning and teaching (EMB, 2004). This debate was particularly relevant and perhaps poignant during the schools closedown due to the outbreak of SARS (Fox, 2004). The introduction of increasingly user-friendly web-based learner management systems (e.g. WebCT and Blackboard) have made it relatively easy for teachers to establish online environments for their classes where they can establish folders to contain curriculum resources, readings, PowerPoint slides, access to library facilities and digital resources, class photos, student self-written profiles, course and term calendars, class email lists, discussion forums, online chat rooms, announcements and news bulletins of schools events, etc. However, simple creation of

such environments does not ensure that the facilities are effectively used or that the online environments supports student learning. As Taylor (2002, p. 33) clearly notes ‘using the Internet as a mode of delivery will not *automatically* improve student learning’. This paper describes and analyses community building online in the foundation module for the MSc[ITE] and introduces models to assist in the design and evaluation of online learning communities.

This foundation module, Teaching and Learning with Information Technology MITE 6024, provides the basic building blocks for the entire degree both in terms of introducing key topics as well as ways of establishing suitable work practices encouraged in the MSc[ITE]. The module uses a series of rich activities and assessment tasks where students compose elements of group and individual activities online to construct their own knowledge. The philosophy underpinning this module is based on social constructivism which proposes that learning takes place in social settings that require individuals and groups to construct their own learning within a social context. The module is based on ten sessions, eight face-to-face sessions of three hours duration each and two online sessions. Students are expected to work an additional fifty hours outside class times on activities including reading journal articles, researching workplace practices, writing notes for individual and group assignments and communicating with fellow students through the online community building environment, supported through the web-based learner management system, the Interactive Learning Network (ILN). Overall, during the ten sessions, there is a balance between teacher input and student input, theoretical work and opportunities for practical work, and a blend of rich assessment tasks with fellow students completed both face-to-face and online (Trinidad & Albon, 2002; Trinidad & Fox, in press). The classroom is arranged in such a way that small group work is encouraged. Although all students have access to individual laptop computers, most classroom activities favour students working in their groups, sharing one computer to input group work and providing responses to the set tasks.

As the module is the first opportunity students meet face-to-face, in the first session students introduce each other, then in small groups, discuss their aspirations and expectations in the course, outlining what they hope to gain from taking the course. Groups summarise individual comments and upload these to the discussion forum in ILN. Groups then compare different inputs and discuss similarities and differences of what was said. The exercise, apart from an important activity for all students entering a new course, provides students with an introductory model of community building and collaborating with fellow students, and in using the online environment to post comments and to compare their comments with others. The mix of face-to-face discussions, online input and comparisons followed by further face-to-face discussions is often new to participants.

This simple pattern of mixing conventional ways of doing things with new, initiated at the start of the module stimulates students to think about the multiple roles of technology to support educational objectives and learning outcomes.

The module structure and assignments set, both group and individual, are also introduced in the first session. Groups of three or four students are formed and charged with two main tasks for the module. The first task is for each group to review a reading on one of the set topics for each face-to-face session, for example, learning objects and cognitive tools. Groups need to critically evaluate a reading, summarise their findings and submit these to the online course room ILN. Each group has to critique other group papers and reviews and complete a quiz, answer questions and respond to discussion forum tasks set by the presenting group. In summary, this group task involves:

- A critical appraisal of at least one journal article on the given topic
- Recommendation with a brief summary of one book on a given chapter
- Links to a minimum of an Internet article and a website relevant to the given topic
- Creation of a quiz or set of questions to help peers learn more about the topic
- Establish an online discussion task to stimulate debate about the topic; and
- Critique and comment on at least two other groups' topics

The second major task requires individuals in the groups to report on the use of ICT in their workplaces and compare and contrast the practical application of ICT. The summary group report is then uploaded online for cross group review. This task stimulates broad discussion across the class of the various workplace technology applications and how these are used. As one student remarked:

'I hadn't thought that such an activity was possible or that it could generate such enthusiastic response from the class. ... I was also surprised and pleased that I could work *with* my peers (rather than against them as is so often the case) on marked assignment work. This way of working resulted in building strong relationships between individuals in groups and across the class. In fact in my group, we've decided to try as far as possible to work through the entire two year course together'

The major individual task requires students to extend the study of technology applications and practices in their workplaces by conducting an evaluation study on what technology is available, how it is presently used and analyse what they feel needs to be done in the organization to make better use of the technology, including a vision for the future. The summary of this work (a component of the second group task outlined above) is then presented to the class in the final session. In this sense, the group and individual

tasks are closely related, with one supporting the other, reinforcing the communicative power of the Internet to support active, interactive and reflective work for all learners (Oliver & Omari, 1999). The tasks set demand ongoing collaboration between students through the use of technology to support, document and construct individual and group work. The work throughout the module reinforces this collaborative community building approach where the use of the technology is an essential part of the learning. As two students remarked:

‘The mix of face-to-face interaction in class between individuals and groups on the set tasks, and through interacting and documenting comments online was a real eye opener for me. ... I can now begin to truly understand the power of IT in education and how I can teach *through* technology to attain my educational objectives’

‘The module showed me a whole new way of using IT. I will bring these ideas into my class to benefit my own students ... the way of teaching and extending class work in and out of school ... I plan to mirror in my own classes the excitement generated.’

The feedback received from students undertaking this foundation module have been very positive as has the summative evaluations in all classes taking this module over the past few years. The module content has considerably changed as has the form and kind of online activities. However, the importance of building and maintaining a sustainable and vibrant online community has remained constant. In order to provide support for other courses that incorporate online learning communities, the following sections offer models for developing and monitoring effective community building activities and environments.

## 2. Principles to Guide Effective Community Building Online

Based on an analysis of literature on situated cognition (e.g. Lave & Wenger, 1991), Vygotskian thought (e.g. Vygotsky, 1978) and learning through participation in communities of practice (e.g. Brown, Collins, & Duguid, 1989), Hung and Chen (2001) and further developed by Taylor (2002) offer four basic principles that need to be considered in building effective online communities. The four principles are: Commonality; Situatedness; Interdependency; and Infrastructure. An explanation of the four principles with illustrations on how the principles are implemented using examples from the MSc[ITE] foundation module are offered in Table 1 below.

*Table 1: Principles to guide effective online community building environments*

Community Building Principles	Examples of Design Considerations for Activities Related to the Principles
<b>Commonality:</b> Learning is a social act leading to the formation of	Activities to engage students in tasks of common interest to establish bonds. For example, in the first session students asked what they hope to gain from the course. Small groups discuss

communities of practice. It includes the process of working together on areas of interest and forming bonds between individuals and groups.	individual expectations before summarising individual comments in the group submission and posting these to a discussion thread. Commonality in this example is that all students have a reason to take the course and have their own expectations. Sharing these reveals many hold similar reasons. This offers a bonding between students.
<b>Situatedness:</b> Learning is reflective, metacognitive and embedded in rich socio-cultural contexts	One group task, linked to the module assessment, requires students to collect data on ICT use in their own workplace, then compare findings with others in their group. The group then produces a table showing the similarities and differences between ICT workplace use and recommends changes and improvements relevant to all workplaces. The 'situatedness' is based on embedding the task in student's own workplace and getting individuals to interact and reflect, taking into account all group members work. Groups present their findings to others who offer feedback on the work presented.
<b>Interdependency:</b> Learning is socially mediated and facilitated through engagement in practice with others. Individuals depend on each other for information, knowledge development, and shared problem solving	Group work is strongly reinforced throughout the module. For example, groups review a reading, dividing up work between members. The group then develops an online presentation summarising the reading, offering critical comment of the reading, with links to related web sites, and inviting students to comment on the reading and their review in the discussion forum. After working through the group presentations, groups give formative online critical but friendly feedback to presenters in a public-to-the-class forum thread. One group completes a more formal review of the presenters' work, forwards this to the tutor to add her/his comments before sending on to the presenters.
<b>Infrastructure:</b> Learning is facilitated by activity, accountability and associated support mechanisms	The rules of engagement, clear links between module objectives and assignments set, individual roles and responsibilities, feedback to all groups, etc is provided to students in designated folders within the online learning environment (OLE), supported through the web-based learner management system ILN. ILN is regularly and frequently used and students become quickly accustomed to knowing where to go to select items or to post files or discussion comments to appropriate threads. In addition, submission of assignments to the public arena is reflected in the facilitating structures and accountability and assessment mechanisms and are all parts of the design of the module. The quality of individual student work within the groups is assessed by peers online and by tutors through monitoring the quality of individual online contributions.

Adapted from Hung and Chen (2001) and Taylor (2002)

This framework offers important design considerations in establishing online community building which can be used by tutors. Salmon (2000) developed a five-stage model that outlines the progressive steps of building effective online communities and these are given in Figure 1 below.

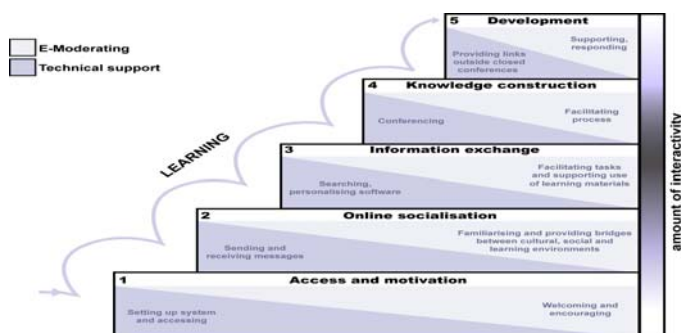


Figure 1: Salmon's (2000) Five-step model(adapted)

The five steps reflect positive progression in the type, form and quality of interaction between students and between students and tutors. The first step: access and motivation is concerned with helping new students become familiar with the online environment by learning first how to use the course software and undertaking very simple instructional activities that help students overcome any technical difficulties they may be facing as well as welcoming and encouraging students to participate online. Salmon reminds us that: "E-moderators should not be complacent about entry level skills to online learning. There are still many novices 'out there' (2000, p. 24)" and that we need to ensure all students gain the basic necessary skills to enter without embarrassment the online class community.

Activities therefore should be very easy and straightforward to complete by all. The second step: online socialization, involves basic online community through offering opportunities for students to view each others' input and to provide initial comments. At the beginning of this step, students should be given simple tasks that cultivate trust and bonding. As students become more comfortable with the online culture, they will become more willing to exchange information and ideas. The emphasis in this step is in highlighting the diversity of class views and opinions. Step three: information exchange encourages participants to share thoughts and questions about course information and course requirements and begin the process of helping and supporting one another. Salmon (2002) warns that "it is common for novice e-moderators to spend huge effort and time in trying to encourage contribution at stages 1 and 2, only to find themselves largely logging on to read their own messages. If e-moderators are too rigorous, they soon burn out! (p. 36)." Salmon recommends that at this stage students are given opportunities to explore and share knowledge in class discussions. Tutors can see when students have mastered this level when they are successfully processing information and taking more proactive steps in their own learning. Step four: knowledge construction is concerned with helping students use higher order thinking skills and becoming more independent as learners. Activities set are more complex and rich in nature, for example project work that offers students the opportunity to learn how to construct their own personal knowledge online. At this stage students start changing from being knowledge transmitters to being knowledge creators and innovators in their own right. Activities challenge students to work on problems that have no right answers but rather multiple interpretations and possibilities. Group discussion in step four is more complex and collaborative in nature. Students work out how best to work together and develop shared strategies for completing group work. In this stage, tutors need to provide clear guidelines, encouragement and support with online feedback that helps focus on students own critical thinking skills. Step five: development, represents the development of new cognitive skills, enabling students to monitor and evaluate their own thinking. Students take on more responsibility for their own learning within their group, sometimes setting up their own study groups or group online communities. Activities in step five need to encourage reflective thinking, shared problem solving or addressing scenarios that require interpretation, creativity and a willingness to test student's own assumptions. Step five also provides the opportunity for students to demonstrate how online learning has enabled them to achieve personal goals, increased their capacity to reflect on the learning process and to facilitate the introduction of new members into the community (Salmon, 2002).

Mentis, Ryba, and Annan (2002) used Salmon's model to develop an evaluation framework for analyzing the perceptions, processes and products of online learning and community building. The framework provides "a systematic and rigorous analysis of the

outcomes of online courses and programmes” and has been “used to identify the essential questions and data gathering methods that are required to analyse the perceptions, processes and products of learning at each stage in the development of an online learning community” This framework is outlined below in Table 2. This framework therefore can be used to help systematically monitor the effectiveness of online courses and online learning communities.

*Table 2: Evaluation of the Five Stages of On-Line Learning*

Stages 1-5	Perceptions	Processes	Products
<b>Development</b>	Do participants become responsible for their own learning and guide newcomers into the online community of practice?	Student Survey. Narrative analysis of posting reflective enquiry. Group feedback & eval	Production of collaborative reports & online folios. Increasing self sufficiency of online community
<b>Knowledge Construction</b>	Do students actively participate through formulating their own ideas or constructing their understandings of concepts, theories and practice?	Content analysis to study cognitive & metacognitive skills & knowledge & depth of processing	Quantitative analysis of content confirms increasing depth of processing over time. Diagrams & models are sent as attachments
<b>Information Exchange</b>	Do students help and support one another through information exchange and advice on personal and academic tasks?	Analysis of electronic contributions for indicators of information exchange	Lists of resources. Messages where to locate materials. Personal support offerings
<b>Online Socialisation</b>	Do students get to know one another on a personal basis and begin to work together on common tasks?	Online activity graph of interaction patterns. Analysis of social effects	Formation of working partnerships Moderation of discussion topics & encouragement to participate
<b>Access and Motivation</b>	Do students report feeling welcome and encouraged?	Student Survey Analysis of intro messages	Welcome messages Notes of encouragement

Adapted Five-step model Salmon (2000) with Mentis, Ryba, & Annan (2002) Triple P Alliance framework

Building learning communities online takes effort and hard work by the tutor who must have a good understanding of what learning should and is taking place, and what needs to be supported by the infrastructure. This includes being able to carefully construct learning activities and assessment tasks that allow students to work in a social context constructing their own knowledge. By using Salmon’s (2000) model with Ryba, Selby and Mentis’s Triple P Alliance framework (2002) as an evaluative framework tutors can reflect on what has worked, what might change and what might be used again when working within an online community. By collecting student’s comments and evaluative data throughout the process the tutor can systematically monitor the effectiveness of the online course and online learning community involved and adjust the learning environment accordingly to help build a stronger online learning community.

### 3. Conclusion

This paper describes the MSc[ITE] foundation course taught at the University of Hong Kong where students can study in a flexible modular structure according to their own pace but also supported in a social constructivist learning environment via the technology structures delivered through the online web-based learner management system ILN. This environment is designed to support academic progress within the MSc[ITE] course relying heavily on pedagogies that emphasise the emergence and growth of autonomous



collaborative learning and online community building established through the foundation module. Using the principles to guide effective online community building environments developed by Hung and Chen (2001) and further adapted by Taylor (2002) important design considerations can be used to firstly establish then support online community building. Combining these principles with the five-step model of Salmon (2000) with Ryba, Selby, & Mentis's (2002) framework, the progressive steps of effective online communities can be followed to effectively build and evaluate the online learning environment.

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