Innovations in distance learning in maritime business education: Experiences from the Australian Maritime College

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Abstract: The paper explores the role of innovation in distance learning in maritime business education, using the Department of Maritime and Logistics Management (MLM) in the Australian Maritime College (AMC) as a case study. Besides reviewing the evolving literature on distance education, adult pedagogy, and learning and teaching online, this paper details MLM’s experience of delivering distance education over the last 25 years to a world-wide undergraduate and postgraduate student cohort. In particular, the current learning and teaching approaches and the influence of technology on the learning environment are explained, as well as investigating future challenges in delivering distance education.

With students from every continent, distance education from MLM provides access to learning for these geographically remote students, with the unit coordinator located in a different place and often time zone from the student. Over time, the method of delivering distance education has evolved. Initially it was delivered by a traditional approach, with print materials being posted through the mail to learners. Nowadays electronic media is being more widely incorporated, such as individual and group communication via web conferencing and provision of supplementary resources including lecture materials, audio and video files to deliver e-Learning through the use of technology.

The paper concludes with an explanation of the lessons learnt from the blended learning experience and the current challenges facing both students and lecturing staff. MLM’s future strategic direction towards innovative learning and teaching in delivering distance education is also discussed. In essence, the paper argues that the continual innovative use of technology will be necessary for the further development and enhancement of MLM’s successful distance learning program.

Keywords: distance learning, technology, innovation
Background

In the past, distance education tended to be undertaken by students living remotely from the campus, often hundreds or thousands of kilometres away. More local students are also taking the option of distance learning nowadays as they combine not only their work life with learning but also their personal and social situations. The advent of online learning has enabled students to study at their convenience in terms of time and space. At times the challenges of distance learning are blurred as lecturers may be dealing with mainly, or only, local students taking the distance education option.

This paper focuses on the international experience of distance learning in the Department of Maritime and Logistics Management (MLM) that has a multitude of complexities, including the enhanced challenge of asynchronous delivery separated by time-zones, geographic proximity and isolation, and culture; for many students it is also their first entry into tertiary education. These circumstances typify the experience of MLM which has students enrolled from over 20 countries throughout Asia, India, Africa, Europe and the Pacific Islands, in addition to all States of Australia. MLM has offered distance education since 1988, initially for seafarers to study maritime business, often to assist the transition from ship-to-shore. Today, MLM’s distance education students range from school leavers to senior employees including CEOs, in varied industries including shipping, ports, logistics, and international trade, both domestically and internationally. The majority of the students are studying part-time whilst working full-time in often demanding job roles in the maritime or logistics industries where for example, they may be working seven day rosters of rotating shift work, be on call 24 hours per day, or working in remote areas such as oil and gas rigs or on ships.

The purpose of this paper is to explain the planned development of MLM distance learning and the increasing use of technology that has transformed the MLM product into a hybridised service offering that bridges distance learning and on-campus learning. The paper provides an overview of the extant views on distance learning from a pedagogical perspective and compares this with the MLM experience in developing the hybridised approach which is explained via a framework of teaching engagement enabled by technology. The paper then explains the lessons learn and challenges that this new paradigm of teaching engagement can create for both students and lecturing staff. The paper concludes by suggesting new developments for MLM’s distance learning and future directions for research.

Pedagogical views on distance learning

Distance education is a techno-social development with a long history incorporating many changes in the forms it takes and the techniques and tools involved (Spector, Merrill, Merrienboor & Driscoll, 2008). A key feature is that the instructor and institution are physically separate from the students (Schlosser & Anderson, 1994). Despite its long history, the terminology utilised remains unclear, making it difficult for evaluation of key aspects and elements involved. For example, inconsistent definitions are found for the terms distance education and distance learning; these terms are also often used interchangeably (Moore, Dickson-Deane & Galyen, 2011). With modern technology being more widely involved in distance delivery, the variety of terms lacking clarity is increasing. Terms such as e-Learning and online learning are frequently used without consistent agreement on their meaning. Ellis (2004) indicates that e-Learning incorporates interactive TV, satellite and audio- and video-tape in contrast to views of authors such as Nichols (2003) who focuses solely on web-based delivery. Further, authors such as Conrad (2002) and Benson (2002) suggest that online learning is a modern version of distance learning. Reviewing the range of terms available, Moore, Dickson-Deane, and Galyen (2011) conclude that distance learning involves a learner and an instructor, a range of instructional resources occurring in different times and/or places and that e-Learning provides further opportunities for instructional exchanges. When surveying attendees at an educational...
technology conference, they further found that wide differences in terms also occur in the field, as designers create and name contexts and objects used for instruction/teaching.

Concurrent with technological change, the social worldview of those involved in distance education evolves. Over time, different pedagogies and learning activities develop, for example, Anderson and Dron (2011) discuss three generations of distance learning, commencing with the view that teaching initially was focused on pedagogy of cognitive-behaviourism. Akin to a transmission system, the lecturer has the locus of control and changes in behaviour and knowledge of the learner are evidence of outcomes. Subsequently, social-constructivism came to the fore, with acknowledgement of the social nature of learning and that learners construct new knowledge from their existing base in the light of new information. Context becomes important and learning is focused on interactions. More recently, connectivism which indicates learning is based on building networks and connections, has gained prominence. Linkages facilitated by the internet enable learners to find and apply information to solve problems. A key implication is that information retention is not as important; lecturers may be absent as learning focuses on recognising critical connections (Barnett, McPherson & Sandieson, 2013).

The community of enquiry model contains three components, teaching presence, cognitive presence and social presence, which are useful when considering the changes in social worldview, arising from developments in pedagogy. These three components overlap to create the educational experience for all parties involved in delivery of distance education (Garrison, Archer & Anderson, 2000). The components are similar to those developed by Biggs (2003) in his 3P learning systems model, which considers instruction/teaching and learning to be interconnected systems. In this model the four key components are student factors and teaching context (blended mode) which forms the presage stage; learning focused activities, creating the process stage in the centre and the final product, being student learning skills. Hamilton and Tee (2013) investigated the 3P model finding that outcomes from teaching and learning need to be considered from all four constructs, not only learning outcomes. They indicate that as the interactivity increases, greater support will need to be provided to students and teachers.

**The MLM experience from delivering distance learning**

Initially MLM’s education program comprised a Graduate Certificate for students employed at sea, in shipping companies or ports. Today, MLM offers three undergraduate degrees, an Honours program, a full suite of postgraduate programs and higher degrees by research programs. All of these programs are available in both distance learning and on-campus modes; block teaching is available for the corporate market. The programs are also all offered in full-time and part-time modes.

Initially, MLM relied on the traditional, hardcopy study guides consisting of 12 modules (one for each study week) with conceptual frameworks developed by lecturing staff. Each module averaged 20-25 pages that synthesised the content of a textbook (if one is used) and a large collection of readings. The study guides and readings were mailed to the distance students; assessment items were contained in the unit outlines. On-campus students received two-hour lectures and a one-hour tutorial per unit per week but did not receive a copy of the study guides. Often the content differed somewhat for the two cohorts depending on when updating of materials occurred. Further, the assessment tasks were usually different for the two cohorts and two unit outlines were prepared. The two cohorts were effectively treated as being separate learning communities; the underlying pedagogy was based on the traditional push model, prevalent at that time (Hamilton & Tee, 2013).

The underlying pedagogy of staff began to change in the early years of this century. Teaching staff, through interactions with education developers, became more interested in fostering learning communities through a constructivist approach, which fitted well with changing student
requirements. Through an intense range of discussions with both distance learning and on-campus students in 2008, it was found that each student cohort wanted the benefits of the other. That is, distance learning students wanted an on-campus experience that made them feel part of a classroom, even if it was virtual, while on-campus students wanted the study guide and readings materials in addition to their classroom activities. Together these prompted the development of the blended learning project to effectively combine the learning experience for both cohorts. MLM successfully applied for internal funding from the University of Tasmania to create new study guides. The new study guides, developed based on unit learning outcomes, focused on an applied learning approach that substantially reduced the 12 module content to an average of five pages each, in addition to the readings, thereby introducing efficiencies in unit development and updating of study guide materials. Another key change was that the learning outcomes for each module of the study guide were replaced by focus questions to direct student learning through the activities provided and thus scaffold the learning (Hmelo-Silver, 2007). Simultaneously, the provision of technology was changing in the University, with the introduction of My Learning Online (MyLO), based originally in WebCT and currently desire2Learn as the learning management system was made available to all staff and students. The increasing availability of technology and the new study guides enabled MLM to create a blended learning community from 2008.

Table 1 explains the changes to MLM distance education before and after 2008. With limited technology involved, MLM's distance education pedagogy prior to 2008 can be described as cognitive-behaviourism, with which learning was predominantly defined, practiced and researched (Anderson & Dron, 2011). The teachers' role was to develop content and adopt direct, one to one communication through available communication channels such as emails. Students, as self-directed learners, undertook individualised learning independently and flexibly, therefore, the cognitive focus was strong under such pedagogy.

After implementing the blended learning project in 2008, it became clearer that embedding technology in the delivery of distance learning has changed the pedagogy used in terms of the role of lecturing staff, interactive communication, learning contents, learning activities, and evaluation. The lecturing staff's role for example, has changed substantially from a knowledge provider and presenter to a guide, facilitator and discussion leader. These approaches support the social-constructivism pedagogy with important features of cognitive presence, social presence and teaching presence in terms of the community of enquiry model (Anderson & Dron, 2011). This has resulted in a much greater use of synchronous and asynchronous communications and interactions among students and between students and lecturing staff. For example, distance students in postgraduate units such as Port Management and Strategy (JNBS16) and Supply Chain Management (JNBS24) actively participate in weekly discussion forums and provide their knowledge in practice to their peers and the lecturing staff. This is an alternative way of constructing knowledge. Of interest is that distance students are able to do networking through MyLO, for example an informal study group has been organised in a postgraduate unit in semester 1 2014. The networking has also assisted in distance students providing information to on-campus about employment opportunities in their organisation. Therefore, knowledge creation and assimilation may not only be from MLM lecturing staff but also from other students who, as full-time employees, share their workplace experiences and industry knowledge through interactions within the online learning community.
<table>
<thead>
<tr>
<th>MLM distance education</th>
<th>Pedagogy</th>
<th>Contents/Materials</th>
<th>Learning activities/tasks</th>
<th>Technology engagement</th>
<th>Learning community</th>
<th>Evaluation (assessment)</th>
<th>Student factors</th>
<th>Teacher role</th>
</tr>
</thead>
</table>
| Prior to 2008 | • Cognitive-behaviourism | • Developing study guide  
• Creating unit structure  
• Print materials  
• CD | • Read and complete tasks assigned in the study guide | • Fax  
• Email | • Cognitive presence  
- individual  
- independent | • Assignments  
• Take-home exams | | Content creator |
| 2008 onwards | PLUS:  
• Social-constructivism  
• Limited connectivism | PLUS:  
• Electronic materials in MyLO:  
- Study guide modules  
- Lecture recordings  
- Lecture slides  
- YouTube clips  
- Case study videos | PLUS:  
• Discuss, create and construct  
• Online discussion and activity participation  
- individual  
- group | PLUS:  
• MyLO  
• Webinars  
• Echo 360 | PLUS:  
• Teaching presence  
• Social presence  
- individual  
- group | PLUS:  
• Online tests  
• Online presentations  
• Online discussions  
• Links to e-readings | PLUS:  
• Prior knowledge  
• Abilities  
• Intelligence  
• Personality  
• Home background  
• Self-directed learner  
• Time management | PLUS:  
• Presenter  
• Discussion leader  
• Facilitator |

Table 1. Evolution of MLM distance education
The primary platform used for the communication and interaction via discussion boards, forums and webinars is MyLO, which also used extensively for the provision of learning resources that include lecture slides, lecture recordings by using ECHO360, video clips, communications such as discussion forums, and assessments. MyLO is very important for distance students as it enables them to share the same resources as on-campus students. To encourage a consistent level of service delivery between lecturing staff, MLM implemented minimum standards for providing lecturing resources in MyLO (see Figure 1). Most staff exceed the minimum requirements by providing more learning resources including lecturing recordings either in mp3 format or ECHO 360 lecture capture, weekly discussion forums and additional readings, video clips, and online quizzes.

**Figure 1. MLM minimum MyLO presence**
Source: Department of Maritime and Logistics Management (2013)

In terms of MyLO improving the use of assessment, first year units such as Financial Resource Management (JNB159) and International Business Communication (JNB154) have received positive feedback for the use of online quizzes for both assessment and for students’ weekly self-review of learning. Distance students have commented that the weekly online quizzes have been ‘extremely beneficial’ for their progress in the unit. Other positive feedback received resulted from including a publisher provided online English improvement tool in the above latter unit, which assisted students in improving their writing skills. MyLO has also enabled newer means of assessing students via the use of the discussion forums mentioned earlier, such as by students’ contributions to discussion threads being made assessable by the staff lecturer as in the case of the postgraduate unit Supply Chain Management (JNB524).

Although technology is the key to changing the teaching delivery paradigm, it is only a means to an end, which is enabling effective delivery and engagement of knowledge. The focus should still be on delivering effective learning and not on delivering state of the art technology. However, to increase effective student engagement and enhance the student’s learning experience and knowledge
adoption, it is the innovative use of technology as the enabler for the emergence of a new paradigm for teaching delivery and student learning.

**Overcoming the challenges created by the new paradigm**

MLM distance education has been evolving towards ‘e-distance learning’. However, despite how it may appear, this planned evolution has not always been smooth and straightforward. For MLM there have been many lessons learnt and challenges still remaining for both staff and students. Some recommendations for departments/schools/faculties beginning their blended learning experience for international and national student cohorts include:

- Invite colleagues from within and external to the university to share their experiences in blended learning.
- Determine the desired objectives for moving to blended learning, such as improving the student experience, providing value-added services, remaining competitive; those hoping for short term financial savings may be disappointed.
- Prepare a realistic budget that includes training costs, resources, and buy out time for lecturing staff engaged in developing their blended learning skills.
- Encourage some staff to become champions and trailblazers in adopting the new techniques and provide them with sufficient resources because they will become the intellectual and experienced experts after the training courses are completed.
- Not to rely on conceptual research on appropriate learning techniques and technologies for distance students, instead, seek out the results of empirical studies and engage in primary research with your own students to ascertain their preferences.
- Have a clear understanding of the various student segments and their educational needs and limitations such as time, cultural barriers, and available internet bandwidth.
- Understand the current limitations of staff and how they can be motivated to achieve the desired objectives in the first point.

For distance (and on-campus) students to gain the most from their educational experience through the cognitive, social and teaching presences in MLM’s development of blended learning communities, a number of challenges will need to be overcome by students and lecturing staff. A key challenge for students is developing self-efficacy that ‘the beliefs in one’s capabilities to organize and execute the courses of action required to manage prospective situation’ (Bandura, 1995, p2). The self-efficacy to learn in an online environment results in better learning outcomes, including having the confidence with general computer skills and the use of online learning platforms(Wang, Shannon & Ross, 2013). Although students may indicate they prefer greater engagement with lecturing staff and students, this is not the situation for all students, particularly those who, due to their work or family situations, value efficiency in their learning over having in-depth effective learning experiences from engaging with multiple sources – the lecturer, students, and supplementary materials. In other words, even when online learning has been applied in distance education some students still adopt an independent and self–directed approach for learning, preferring not to engage with the learning community (Peters, 2003 as cited in Garrison, 2009). For a blended learning distance environment, skills and motivation are important for engaging students in the learning community (Wang, Shannon & Ross, 2013). Even if all the appropriate tools and resources are provided by lecturing staff, the challenges for students include:

- Changing from lurkers to active participants
- Overcoming embarrassment of asking the perceived "stupid questions" online
- Moving beyond being a strategic learner to being an effective learner
- Developing technical efficacy (Wang, Shannon & Ross, 2013)
• Being able to self-regulate their learning behaviour (Wang, Shannon & Ross, 2013).

For lecturing staff, challenges include:

• Adopting the connectivism pedagogy, i.e. a collaborative-constructivist approach to provide students a meaningful learning experience. This requires advanced applications of technology in addition to the application of Web 2.0, social networks and aggregation and recommender systems involving the co-creation and use of knowledge (Kirkpatrick, 2011)
• Both engaging in and having sufficient training for e-distance delivery and pedagogy
• Forming learning communities when lecturing staff are already time-poor; having conducted a face-to-face class, additional time is needed to engage the distance component of the learning community
• How to engage diverse groups of students, such as mature age and internationals who form part of the same learning community (Kahu, Stephens, Leach & Zepke, 2013)
• Promoting technological self-efficacy amongst students, particularly in their early units of study (Wang, Shannon & Ross, 2013)
• Balancing engagement of students in their learning and technology-mediated delivery (Dawson, Charman & Kilpatrick, 2013)
• Facilitating connection in the learning community, given the geographic dispersion (Dawson, Charman & Kilpatrick, 2013).

Conclusion

MLM has been successfully conducting distance education over many years. During that time there have been significant changes in both pedagogy and technology. Pedagogy has evolved from a push model of education to one where a community of enquiry is formed, in which all instructors, students and the teaching presence interact in a socially-constructed world. Reflecting that changing pedagogy, the learning activities, the evaluative assessment tasks and the physical and virtual artefacts, MLM developed to assist its learners have transformed. Part of this transformation has been possible by the progression in the technological environment and hastened the transition to a socially-constructed community of learners.

Future directions for MLM relate to further developing learning communities to effectively engage our diverse learners. The creation of learning communities that overcome the lack of technical self-efficacy in first year units is a priority. A potential approach is adopting artefact creation as an assessment activity, with the artefacts created by mixed groups of learners, which may increase self-efficacy in technology and simultaneously engage diverse groups of learners. A further complex challenge for MLM relates to the use of flipped classrooms, which are becoming increasingly common in our on-campus classes. The transposition of these teaching approaches to the distance environment is a major challenge that MLM is currently considering.

References


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