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# Plagiarism check Enhancing information research and learning skills through e-learning, the case of Monash University Library

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# Plagiarism check Enhancing information research and learning skills through e-learning, the case of Monash University Library

## 1. Introduction and background

Technology enhanced learning has become one of the dominant modes of teaching and learning in higher education today. Indeed, it seems that no higher education institution can survive without embracing the new educational technologies that have come to define teaching and learning in the information and knowledge era. E-learning, as such, has become one of the dominant forms of delivering teaching and learning content. Rooted in established pedagogical foundations, e-learning adopts the constructivist approach to teaching and learning which attributes the construction of knowledge to learner experiences. Thus learners construct their own understanding and knowledge through interaction with others. As universities adopt the e-learning approach, libraries are also forced to find ways to deliver their content in ways and on platforms where the new generation of students interact.

The Horizon Report, which is a series of reports that predict the major influential technologies that are likely to impact on research, teaching and learning in higher education, is one of the most useful publications in understanding the impact emerging technologies have on higher education. The report notes that concepts like open content, open data, and open resources, along with notions of transparency and easy access to data and information is becoming a value (Johnson et al., 2013).

Freeman (2007) asserts that libraries must experiment with new ways of supporting the academic community

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and must be flexible in order to accommodate evolving information technologies.<sup>2</sup> Monash University Library (MUL) has risen to the challenge by making e-learning one of its strategic priorities in support of research, teaching and learning.

## 2. Problem statement

Libraries and librarians are faced with a rapidly evolving higher education landscape, necessitated by equally rapidly evolving ICTs. Traditional library science degrees and related qualifications have not quite equipped librarians and information professionals in handling this change, nor has succession planning prepared librarians of today for these ICTs. As Ward (2010) puts it, we as a profession now accept that the increasing volume of information is only of value to an academic community when it is employed in a meaningful way within the process of learning.<sup>3</sup> As much as information is widely available and accessible out there, Information Literacy (IL) has never been as pertinent as it is right now. Acquiring, selecting, disseminating, evaluating and using information are skills that are unique to librarians and through rigorous information literacy teaching and training, librarians can still offer valuable services in their academic environments. What ICTs and the internet bring to the table is a plethora of technologies of unstructured, unevaluated information. Walker, Huddleston and Pullen (2010) argue that the rapid rise in fast mass communication has reached the point that in order to live, learn and work successfully we must learn to use technology efficiently and effectively. Linking lifelong learning and information literacy with e-learning is one of the ways some libraries are trying to deliver their services and remain relevant in the information and knowledge era. Authors like Andretta (2005), Secker (2004) Ward (2010) Joint (2005) and Hadengue (2005) are some of several authors who

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have argued for the link between information literacy and e-learning. They maintain that information literacy should play the central role in any e-learning initiative and that in this complex learning environment e-learning should be supported by solid information literacy frameworks. The focus of this research therefore looks at how MUL has used e-learning technologies to enhance information literacy or Information Research and Learning Skills (IRLS), as it is referred to at MUL.

### 3. Review of literature

There has been considerable literature on the subject <sup>4</sup> of e-learning, especially pertaining to higher education. The 'globalisation of higher education' is one of the widely written about topics in academic literature and e-learning as such is a major focus of these discussions. This review process seeks to determine the historical development of the study of e-learning within higher education. It focuses on e-learning specifically, pertaining to higher education, academic libraries and especially its use in Information Literacy.

#### 3.1 e-Learning: history and background

Catherall (2005) defines e-learning as any technology allowing for the delivery of learning resources or communication between tutor and student. Meredith and Burkle (2006) define e-learning as learning facilitated by internet and World Wide Web (WWW) technologies that creates connectivity between people and information, and creates opportunities for social learning approaches. <sup>5</sup> There are many definitions of e-learning and all of these definitions allude to a type of learning that is supported, enhanced or facilitated by technology and the internet. Harasim (2006) argues that the very genesis of e-learning as based on human collaboration in knowledge work and innovation can be traced to the development of network

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communication in the late 1960s, with the invention of e-mail and computer conferencing over packet-switched networks in 1971.<sup>6</sup> Nicholson (2007) however, points out that in the history of e-learning, it is important to bear in mind that no single evolutionary tree and no single agreed definition of e-learning exist. He goes on to say that since the 60s, e-learning has evolved in different ways in many spheres such as business, education, training, as well as the military. Thus the form and shape of e-learning might have changed with the times, as well as introduction of new digital technologies, but it must be understood within the context in which it is applied.

### 3.2 e-Learning in higher education

Faced with dwindling budgets and escalating costs, educational institutions are being forced to cut costs and to come up with innovative ways to provide <sup>7</sup> high quality services at much lower rates. Herrington (2006) argues that the most powerful use of technology in higher education perhaps is where technologies are used as tools in authentic learning environments. Laurillard (2006) asserts that e-learning is important in higher education because the use of ICTs and interactive technologies support many different types of capabilities and for each of these capabilities; there is a learning application that could be exploited in higher education. For the time being, e-learning seems to be a worthwhile strategic move but it is not without pitfalls. E-learning proponents are often accused of failing to recognise the significance of these pitfalls in that there has been very little or no research <sup>8</sup> done on whether the 'learning' in 'e-learning' happens in this context. Several authors such as Guri-Rosenblit (2005), Njenga and Fourie, (2010) and Gandolfo (1998) have warned that the discourse on new technologies, especially in the academic and corporate arena fails to bridge the gap between

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rhetoric in literature describing the sweeping effects of the digital technologies on educational environments and their actual implementation. As Guri-Rosenblit (2005) puts it, often discourse on new technologies suffers from 'The Tower of Babel Syndrome' â a confusing language and misleading conclusions, emanating from the fact that people refer to totally different functions and roles while using the same generic terms.<sup>9</sup> She argues that the language used to depict these learning environments is often blurred and confusing. Njenga and Fourie (2010) concur with Guri-Rosenblit when they say that there is no clear distinction between teaching with, and teaching about, technology.

### 3.3 e-Learning and academic libraries

Traditionally, libraries have played the role of custodian over print and other resources and have gradually moved to electronic resource provision and management. This has been the result of new technological advancements such as virtual learning or learning management systems being introduced in higher education. Libraries therefore find themselves in a situation where they have to play a bigger role in teaching, learning and research in order to remain relevant to their academic constituencies. According to the OCLC Learning Task Force (2003:6) 'e-learning integration offers libraries a powerful medium for reaching faculty and students directly as they engage in teaching, learning,<sup>10</sup> research and outreach'.

Consequently, this integration helps the library to reach both faculty and those students who no longer make physical use of the library by providing a web based and enriched service for their information needs. Sen (2009:177) argues that, 'academic libraries need to apply appropriate communication technologies in support of e-learning and e-research by providing seamless access to electronic resources

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and <sup>11</sup> services'. Sharifabadi (2006) reports that one of the challenges libraries face is the widespread availability of free information on the web, and this has serious implications for education programmes as well as understanding library user's behaviour. One of the solutions to this, as suggested by Lippincott (2002) is that libraries should support e-learning as a learning environment and resources network which is designed to meet the needs of learners, in both individual and collaborative settings.

### 3.4 Applying e-Learning to Information Literacy

The American Library Association (1989) defines Information Literacy <sup>12</sup> (IL) as the ability to recognise when information is needed and having the ability to locate, evaluate, and use effectively the needed information. A person who is information literate is one who has learned how to learn, it is a person who knows how to learn because they know how knowledge is organised, how to find information, and how to use information in such a way that others can learn from them. <sup>13</sup> According to the International Guidelines on Information Literacy compiled by the Information Literacy Section of the International Federation of Library Associations (IFLA), there are <sup>14</sup> several terms that contribute to the concept of information literacy which, when broken down, relate to different types of skills, level, categories of learning amongst other aptitudes Lau (2006). In this context, information literacy focuses on information use rather than on bibliographic skills: that is, students must develop information competencies to become effective learners. <sup>15</sup> The constructivist based approach of learning in information literacy focuses on students engaging with information in order to solve a problem and thereby creating new understanding by active investigation and thought, instead of memorising facts presented in the class lecture (Lau, 2006).

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#### 4. Methodology

The study was part of a broader Master's thesis which endeavoured to explore the role and contribution of the Monash University Library (MUL) in teaching and learning through e-learning, especially pertaining to the provision of Information Research and Learning Skills. This initiative of bringing e-learning to the Library was necessitated first, by Monash University's plans to exploit technology to improve learning outcomes using blended and online learning.

Secondly, the availability of a vast array of information resources and services in the library made e-learning another viable option in diversifying these resources and services as widely as possible. Also, MUL has 10 libraries spread across different campuses and countries (Australia, South Africa and Malaysia), therefore information literacy instruction and provision by means only of Librarian & Learning Skills Adviser interaction became an insurmountable task.

Bringing to students the vast amount of resources (which includes over 1 300 databases, 80 000 e-journals and 480 000 e-books, past exam papers, lectures online, online reading lists) and services and making sure that they are aligned with the <sup>16</sup>

university's learning outcomes became a challenge.

This was a qualitative research study and the researcher employed the case study method. For data collection purposes, an online questionnaire was the most suitable instrument given the geography and diversity of the population group. Subject Librarians and Learning Skills Advisers formed the bulk of the study population because they are most involved in content creating of e-learning objects.

#### 5. Findings

This section presents the findings of the study and in the logical order of the most pertinent questions/topics the study aimed to answer or

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### 5.1 Expertise in creating pedagogically effective e-Learning content

The definitions of e-learning supplied by respondents showed a clear understanding of the pedagogical principles that underlie e-learning in the educational context. Therefore, staff may be considered cognisant of the link between e-learning content creation and how it fits within the broader educational objectives of Monash University. However, the findings also reveal that the knowledge and expertise considered necessary in e-learning content creation was quite diverse. Most respondents also felt that they didn't possess enough of the skills necessary to create such content. Linking e-learning to sound pedagogy is the basis of creating effective content but that is not quite enough. A sound knowledge of the fundamental principles of <sup>17</sup> teaching and learning, educational theories, a teaching qualification, IT skills, instructional/educational design, and curriculum design are some of the skills and expertise the respondents felt they needed.

Although some respondents had some experience or had attended a course in e-learning content creation, there was a need to continue skilling in this area. Only 25% of the population group felt that they had advanced skills in e-learning content creation. This indicates a clear need for continuous training in this area as it evolves, as the curriculum changes and student needs change. As one respondent commented, 'I learn through trial-and-error. I find that most e-Learning courses are often behind-the-times and far too basic for my needs'. This is an indication that e-learning technologies change rapidly and staff have to keep abreast with these new developments if they are to deliver effective e-learning teaching and learning content.

## 5.2 e-Learning in/for Information Research and Learning Skills

The main aim of e-learning initiatives at MUL is to enhance Information Research and Learning Skills.

The research question asked in relation to this is 'how has MUL used e-learning to enhance Information Research and Learning Skills'? The findings revealed that the Librarians and Learning Skills Advisers have actively and successfully created a substantial number of e-learning objects using different platforms and for different tasks with differing learning objectives. Some of these objects included Moodle quizzes and courses, instructional videos embedded on Moodle, online tutorials for differing tasks, among others. As well, the researcher observed that the development of the Monash Library E-Learning Objects Repository indicates that there is an active engagement with e-learning in the library. The vast array of e-learning objects in the repository is a clear indication of how involved Librarians and Learning Skills Advisers are in content creation.

The need for the creation of the different types of content was attributed to various reasons ranging from lack of contact time with students, requests from academics for such resources and minimising the number of contact workshops for teaching such skills. One of the respondents mentioned that these resources can be used as 'backup' by students who need extra help. Another respondent also highlighted the importance of collaborating with academics when creating these modules in order to blend content that is relevant to students.

The types of e-learning software that were used to create these IRLS modules were Moodle, Adobe Presenter, Articulate Storyline and Captivate. Moodle came out as the most preferred platform as 81% of the respondents reported that they have used it the most.

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As well, Captivate came out as another preferred platform for creating e-learning content. This is one of the platforms on which MUL conducted focused training of staff. In 2012, MUL undertook a wide training programme of staff on new e-learning technologies and Captivate was the main focus of this training. The main aim of the course was to <sup>18</sup> empower staff with the knowledge and skills to create e-learning tutorials that are aligned with the learning objectives of Monash University. In their paper titled 'Online learning: eM-powering eFutures through developing staff capability at Monash University Library' Smith and Yates (2012:25) report that staff evaluation and feedback after the course indicated that there was a need for 'further investigation into how other libraries in Australia and around the world address staff training of complex subject matter and skills and in geographically dispersed working communities'. Furthermore 'the course should be about much more than using a piece of software but also about the e-learning development process'.

### 5.3 Effectiveness of e-learning in IRLS

Evaluating the effectiveness of IRLS or Information Literacy is perhaps the most difficult part of library and information instruction. Now, e-learning in IRLS provides an even more complex problem space for librarians as there is no face-to-face interaction and one cannot always measure the student's response. Even in a workshop or face-to-face interaction, there is no certainty that the skills that students have learned will translate into better academic performance. First, the study revealed that the Library uses a lot of platforms and initiatives to promote e-learning objects. They mention Moodle (course-specific Moodle sites) as the most effective platform to promote them, especially if embedded with a specific task or objective that the students are working

towards. Orientation, class contact sessions, embedding in subject guides and individual consultations are some of the platforms respondents said they used. Also, academic staff are seen to be the best people to advertise these as students have more contact time with them and generally take what their lecturers say more seriously.

Now, all these initiatives still do not translate into an assessment of how effective they are in teaching and learning. Usage statistics of the e-learning objects, lecturer feedback (in terms of student performance in assignments), informal student feedback and evaluation forms are some of the assessment measures used by the respondents. However, some respondents gave an indication that this is one area that is difficult to answer. One respondent articulated it this way: 'That's a difficult one! I suppose if lecturers report an improvement in student's assessment tasks? Some of the modules do collect usage stats as well but that doesn't always mean effectiveness, right?' Judging from this response, the researcher might conclude that this is perhaps one area where a concerted effort needs to be made with regard to assessing the effectiveness of e-learning in IRLS.

#### 5.4 Challenges in e-learning content creation

The study indicates that most of the challenges encountered in e-learning content creation had to do with time constraints, lack of skills and the rapid developments in e-learning technologies, which the respondents felt they had no time to keep up with. The balance between being a Librarian/Learning Skills Adviser and a content creator was seen as one of the challenges. Respondents felt that content creation took them away from their main responsibilities. Others felt that they were 'old school' and preferred interacting physically with students. As one respondent puts it: 'it's not always easy to create online content for the

reason that you can't put a face to what you're trying to communicate. Students also cannot ask questions or ask you to clarify something they don't understand, as they would in a class setting'.

E-learning content creation requires dedicated time and respondents felt that this was time they didn't have as they had more pressing responsibilities. Time pressures and lack of skills therefore came up as the biggest challenge in e-learning content creation.

#### 5.5 Strengths and limitations of e-learning in the provision of IRLS

As reported in the previous chapter, the researcher wished to establish whether MUL staff embarked on e-learning initiatives because it was part of the Library's strategic priorities or if they actually believed in what it was trying to achieve. As creators of the content, the researcher felt it was important for the respondents to put themselves in the student's shoes and assess these as a student would. That way, they could look objectively at e-learning for IRLS, not as creators but as receivers of the content. It is important to address these challenges in order to improve on best practices and to address issues that might otherwise not be evident to Library management. And where there are strengths, it is also important to take note of these and use these to improve in other areas.

#### 5.6 Strengths and limitations of e-learning in the provision of IRLS

The research highlights some of the strengths of e-learning in IRLS, such as that e-learning allows for a wider reach of services to students, anytime, anywhere. There is no limit to how many times a student can interact with a module: all content is repeatable. E-learning also accommodates independent learning styles. It saves Librarians and Learning Skills Advisers time as there is no repetition in tasks done in class, for example. One respondent

explained the learning process involved in e-learning quite well when she said, 'the more we learn about e-learning, the closer we are to understanding how to simply and efficiently explain the process of learning and research'.

E-learning also encourages independent critical thinking in learners by putting the responsibility for learning in the hands of learners. It also reduces training costs and increases the scope of offerings. Lastly, e-learning allows for a quick response to constant change and rapid product innovations. There were also indications of limitations of e-learning in IRLS. E-learning does not cater for all learning styles. Some students lack the computer/IT learning skills needed for effective interaction with e-learning content. There is not enough awareness of the existence of e-learning resources; most students don't know that they exist. Also, some respondents felt that the lack of human interaction with Librarians and Learning Skills Advisers made staff feel redundant. It was also reported that the effectiveness of e-learning in IRLS was quite difficult to measure. Although usage statistics and student feedback were seen as measures, some respondents felt that these cannot be used to determine effectiveness. Another limitation that came out often was the lack of instructional design skills by staff. The respondents felt that lack of skills culminated in poor quality content. One respondent also mentioned that e-learning modules were not cross-platform friendly: they could not be used on mobile devices for example. This is a big limitation in an environment where learners use a variety of devices, especially mobile devices. The idea behind e-learning is that resources and services must be available anytime, anywhere. Therefore e-learning technologies should be compatible with varying types of ICTs.

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## 6. Conclusion

One of the questions asked in the study<sup>19</sup> was 'which type of e-learning models respondents preferred between standalone modules/tutorials/simulations, online collaborative learning and blended learning'. Surprisingly, 75% of the respondents said they preferred the blended learning model. Some of the reasons cited for this preference<sup>20</sup> were that blended learning caters for both learning styles. A mix of traditional and online teaching and learning methods was more ideal than either one of these learning models. Others felt that the type of e-learning model used should always be dictated by the desired learning outcomes of the task or activity at hand. There's no 'one size fits all' in the e-learning context and therefore content creators should well understand the learning objectives of the tasks they create content for. One respondent articulated it quite well when she remarked 'E-learning is a tool. Its weaknesses and strengths come from the way in which people use it. An uncritical approach to e-learning creates false expectations. E-learning in itself is not a solution'. The findings of this study reveal that e-learning in Information Research and Learning Skills is changing the way the Library provides its services to the University. There has been considerable success in this endeavour but there are still challenges. What is evident from the research is that there has not been a thorough evaluation of the effectiveness of e-learning in IRLS. There is no clear indication of how these<sup>21</sup> activities translate to better learning outcomes. Again, usage statistics or student enrolment on e-learning Moodle units cannot be used as a measure of the effectiveness of e-learning in IRLS. As with Information Literacy training, the important measure lies in the assessment of student academic performance and the consequent determination of its

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effectiveness, not in the number of students who attend IL training sessions. This kind of assessment becomes even more complex in an e-learning environment.

E-learning will continue to shape the academic landscape and academic libraries have to play a pivotal role in delivering their services in this medium. What is pertinent is that e-learning must not happen for its own sake: an effort needs to be made to ensure that there is a real value added to academic teaching and learning.

## 7. Recommendations

Based on the results of this study, the following <sup>22</sup> recommendations were made to the management of MUL:

### 7.1 A conceptual model to measure the effectiveness of e-learning.

The effectiveness of e-learning in teaching and learning still remains debatable in e-learning research and literature. Leung (2003:124) says that, 'the important goal of e-learning is that it should be equivalent to or better than learning provided through other delivery modes, such as the traditional face-to-face and classroom-based methods of instruction'. The difficult task of evaluating learning is even more compounded in e-learning. As the study shows, a lot of the respondents couldn't exactly provide a satisfactory account of the effectiveness of e-learning in IRLS.

MacGregor and Turner (2009) argue that while some studies support the view that there is no evidence to support the contention that e-learning is more effective than traditional teaching methods: others actually found e-learning to be more effective. They go on to say that there is <sup>23</sup> a need for greater emphasis on empirical research and researchers in this field need to be more cognisant of the multifarious



variables that influence e-learning effectiveness. They list these variables as 'level of learner control; social interactivity; learning styles; e-learning system design; properties of learning objects used; system or interface usability; ICT and information literacy skills; and the manner of degree to which information is managed with the e-learning environment' (MacGregor & Turner 2009:163).

What is evident in this study is that there is a theoretical understanding of e-learning based on sound pedagogical foundations. The focus seems to have been biased towards content creation and up to the date on which this research was concluded there does not appear to have been a focus on evaluating these efforts. The researcher would therefore suggest that a thorough assessment into the effectiveness of e-learning in IRLS be conducted. There are many proposed models for evaluating e-learning effectiveness but very few fit within the context of academic libraries and information literacy. Therefore, MUL should develop its own assessment model that is aligned with the curriculum and the Research Skills Development Framework. That way, when Librarians and Learning Skills Advisers create e-learning content, they have access to a conceptual framework that guides them. Macgregor and Turner's variables mentioned above could be used as a guide into what to include in such a model.

## 7.2 Introduction of e-Learning Librarians

One of the major issues Librarians and Learning Skills Advisers mentioned in the study is that they hardly had the time to create e-learning content. They had many other responsibilities and content creation requires a considerable amount of time if it is produce quality. Coupled with expertise, which many felt they did not have, the researcher would suggest that the

Library introduces the new role of e-Learning Librarian. This role would work closely with the e-Learning Co-ordinator/Instructional Designer, but would bring the IRLS expertise needed to create this type of content. In that way, only Librarians who are passionate about this field would apply and they would then be responsible for training, content creation and most of the duties related to e-learning in IRLS. Perhaps the e-Learning Librarian can also investigate the role Librarians can play in course-integrated instruction and curriculum planning, as these are areas which require first hand involvement by the Library better to produce effective e-learning content for improved teaching and learning. This role would also foster a much more collaborative relationship between academics and the Library.

### 7.3 Continuous training and skilling of staff

The rapid changes in ICTs in Higher Education require an intense focus on skilling and re-skilling of staff. Libraries especially have become hubs of information and technology and many librarians are not fully equipped to deal with these new developments. New fields such as Data Management, E-learning, Blended learning and E-resources have emerged and these require that librarians engage in teaching and learning in ways that previously were not in their domain of expertise. Therefore, there is a need to constantly make training an integral part of their functions. Technologies change rapidly, and as one respondent remarked, your knowledge can get outdated very easily in this field. As Ward (2010) argues, the convergence of e-learning technologies, new practices in the broader teaching world and increasing volume of information and information literacy, have all reaffirmed the academic library as central to teaching and learning. If the Library is to continue to exploit technology to improve learning outcomes and remain

central in the education process, they have to put a concerted effort into staff training and skilling.