Strengthening literacy: Academic and digital literacy in competition or in complementarity at the University of Swaziland?

Karen Ferreira-Meyers[1] and Jane Nkosi [2]

Abstract

A variety of strategies have been set up to allow for the development of academic and visual literacy from 2008 onwards, when the University of Swaziland (UNISWA) introduced Moodle as its preferred Learning Management System through a pilot project. This was spear-headed by the Institute of Distance Education in collaboration with the departments of Academic Communication Skills, Modern Languages and Mathematics. Building on previous studies regarding academic and visual literacy at UNISWA, we investigate whether these strategies benefitted the students and/or the faculty members, and whether students' digital competencies increased or became more specific by examining exercises, forums, chat rooms, quizzes and other resources made available to students in diverse subjects. We focus, in particular, on language instruction (English, French, and Portuguese). We conclude with an overview of Moodle's strengths and weaknesses in view of setting up a maximized complementary system which, ideally, augments academic, visual, and digital literacy.

Keywords: learning management system, academic and visual literacy, language instruction, information literacy.

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[1]. Lecturer at the University of Swaziland email: karenferreirameyers@gmail.com

[2]. Lecturer at the University of Swaziland; email: jhnkosi@yahoo.com

Introduction

With the increase in knowledge and developments in information technology, universities find it imperative to integrate technology in their course delivery to keep abreast with new developments and to be relevant to the learning needs of the 21ˢᵗ century learner. In that regard, they seek out resources and tools to make learning and teaching more effective, and at the same time consider budgetary constraints. Thus, the choice of an appropriate Learning Management System (LMS) is largely influenced by the extent to which the LMS can be effectively used by lecturers and students to facilitate classroom and distance learning. The University of Swaziland (UNISWA) has selected *Moodle* as its preferred LMS. As reported in the 2009 E-Learning in Africa conference, held in Dakar, Senegal (Ferreira-Meyers 2010), this is a concerted pilot project. Various departments have now started posting resources on the system. In this paper the researchers focus on the resources and strategies proposed by the Department of Academic Communication Skills (English) and the Department of Modern Languages (French and Portuguese) to ensure that the learners' literacy skills are developed through the courses they pursue at UNISWA.

The learning community at the University of Swaziland has been on the look-out for tools that can help the learners to enhance their literacy skills. Literacy is often defined as the ability to read and write with a level of proficiency essential for communication. However, this definition confines literacy to written texts. Individuals need various types of literacy to be functional in today's world. In educational settings, academic literacy is a vital skill. Academic literacy involves a combination of relevant skills and knowledge for learners to be effective in their studies. At the University of Swaziland in particular, learners should be able to display a variety of literacy skills to be functional in their studies. These include the appropriate use of academic language, technical literacy, information literacy, and knowledge of the cultural context. In other words, learners' knowledge should go beyond reading and writing skills. They should be able to locate information from various sources, synthesize and use the information across the curriculum. This requires a combination of all resources and skills on the part of the learners as well as on the part of the lecturers. Below is a summary of critical academic skills based on the 'Big 6' by Eisenberg and Berkowitz (online document):

1. *Ability to clarify* and understand the requirements of the

problem or task for which information is sought. Basic questions asked at this stage are**:** What is known about the topic? What information is needed? Where can the information be found?

2. *Locating:* Ability to identify sources of information and to find those resources.

3. *Selecting/analyzing***:** examining the resources that were found; selecting information deemed to be useful in solving the problem.

4. *Organizing/synthesizing* the information in order to develop solutions.

5. *Creating/presenting***:** information or solution is presented in an appropriate format.

6. *Evaluating:* this involves the critical evaluation of the completion of the task or the new understanding of the concept. Was the problem solved? Was new knowledge found? What could have been done differently? What was done well?

The enquiry-based approach to learning: definition and possible benefits

An enquiry-based approach to learning incorporates the following basic steps or components: ask questions, explore by observing and investigating, analyze and describe findings, communicate and share by writing and discussing, and reflect on what has been learned. Enquiry in education should be about a greater understanding of the world in which learners live, learn, communicate, and work. All of these processes also require learners to analyze two or more elements in terms of their similarities and differences on one or more characteristics. This type of analysis is a mental operation that is basic to human thought (see Markman and Gentner, 1993; Medin, Goldstone, and Markman, 1995; Gentner and Markman, 1994).

The enquiry-based approach encourages learners to take part in research, which further promotes active engagement with learning, and increases collaboration with other learners and lecturers. This approach is also noted for its contribution to fostering self-reliance and autonomy in the learner. As they become autonomous, learners develop an identity and become aware of their strengths and weaknesses. This is the approach that is used at UNISWA to teach basic language skills in

the language department. The approach helps learners in other ways: it provides a powerful motivation to remain abreast of the workload, and learners appear to appreciate this enforced discipline. Because student verbalization is such a significant component of class time, learners seem more likely to respond to open-ended, whole-class enquiry. When learners form small groups and brainstorm on certain topics, it is not unusual for groups to offer interesting and creative ideas that form a springboard for short discussions. Finally, the queries asked of learners provide moments of mental refreshment, which help enliven everyone in the classroom, including the lecturer.

Our experience suggests that there are many benefits to using this teaching approach. Foremost is that it teaches learners more than facts about language; it teaches them an important cognitive skill - to analyze literature for key elements of any topic they will be reading on. In addition to fostering the development of cognitive skills, the enquiry-based approach also helps learners by providing an organizing scheme for making sense of the mass of detail present in the reading. They also have a cognitive framework on which to hang new facts.

While at UNISWA the lecturers and tutors have used the enquiry-based approach, mainly for smaller assignments, it is clear that enquiry-based learning is at the heart of any research activity, such as the end-of-study projects our learners work on. An enquiry-based approach is versatile, flexible for learners, highly motivating, and connected to the real world.

As today's employers look for graduates with excellent generic skills - communication, interpersonal, learning, numeric, self-management and use of IT - as well as individuals who can work independently and have high-quality, transferable research skills, learners who have had an opportunity to learn with the enquiry-based approach should do better than those who have not. The enquiry-based approach exposes learners to various literacy strategies such as directed reading-thinking which, according to Stauffer (1969), engages students in a step-by-step process that guides them through an informational text. As learners go through the text, they question and make predictions.

Learner autonomy and self-directed language learning

Learner autonomy implies learners participating in the planning, reflecting on and evaluating the learning process. Self-directed learners are willing to assume responsibility for their own learning. With this

ability, learners monitor their learning and assess their own progress. They are be able to test their ideas and evaluate how they are faring in any given task. Self-assessment is an integral part of self-directed learning and learner autonomy.

However, learners need a framework within which they can work in order to achieve these goals. This framework includes suitable language learning tools that foster independent reading to learn. Therefore, e-learning and its tools such as *Moodle* have an added advantage in developing skills required for autonomous and self-directed learning within a learning community. According to Palloff and Pratt (1999: 163), "the power of a learning community promotes a new sense of self and supports intellectual and personal growth".

While it is clear that the enquiry-based approach offers a myriad of advantages, there are challenges within UNISWA's e-learning set-up and within *Moodle* itself that need to be addressed before the university community can fully benefit from this teaching and learning strategy.

Features of *Moodle*

The following are some of the in-built features within *Moodle* which the researchers are currently putting to the test to verify whether they provide a better way to implement enquiry-based learning strategies:

- *Moodle* has Quickmail, an email function that makes it possible to email selected groups of learners or all learners from within *Moodle.*
- It has customizable content areas for course information such as course outlines, requirements, staff information, learners' lists, announcements, and Frequently Asked Questions (FAQs).
- It has a document repository facility that provides easy access to course materials such as lecture notes, handouts, past tests and examinations, and modules.
- *Moodle* provides access to a range of resources and materials which may not otherwise be available or accessible; for example, graphics, sound (very useful for teaching foreign languages), animations and multimedia.
- It has efficient communication tools like an email facility, discussion forum (an asynchronous discussion tool; several options for group forum participation) and a Chat Room for

real-time discussions.

- ▪ *Moodle* makes surveys of opinions prepared by instructors or administrators available.

Advantages of *Moodle*

Moodle is free to run (except for webhosting costs), can be easily installed/used and can be scaled from a single course to numerous courses for a large university. Unlike many LMSs, *Moodle* activities/ courses can be altered during their progression, enabling adaptive responses to pedagogical needs, and are formatted as a localized, entire set of weekly or topical learning activities on one page rather than over a variety of activity pages which can create confusion for students (Berggren et al 2005; Beatty and Ulasewicz, 2006; Cole, 2005).

The advantages of *Moodle* in terms of language teaching have been catalogued in various studies cited by Brandl (2005). According to Brandl, the layout and organization of *Moodle*, as well as its course management features, content and resources (e.g. the built-in Html editor and the glossary module) all contribute to making it an appropriate language learning and teaching tool, as it is based on constructivism and participatory learning viewpoints. Eclecticism, which is the most recent pedagogical methodology in language learning and teaching (following the communication model), favours the use of any appropriate resource wherever it can be found. *Moodle* is noted for its usability and intuitive interface, and for the fact it supports various automated personalized services that are easy for faculty and students to access, create, deliver and present. The platform is a widely-tested, high-availability system, allowing tens of thousands of learners, faculty, and administrators to simultaneously log in and carry out their daily tasks. *Moodle* is interoperable with international and industry learning materials standards, and is IMS and SCORM-compliant. This means that *Moodle* will support content from different sources and multiple vendors' hardware/software solutions, for the authentication of users, enrolment, and for content such as reusable learning objects, quiz questions and forum discussions. According to Cole (2005), although *Moodle* can be used in a variety of ways, it lends itself to a social and interactive learning process and challenges the educator to create an effective educational design that utilizes the affordances of the *Moodle* software.

Classroom examples of strengthening literacy: The Department of Academic Communication Skills experience at the University of Swaziland

Experience gained by the lecturers in the Department of Academic Communication Skills at UNISWA shows that while it is assumed that by the time learners get to the university, they have acquired sufficient knowledge to understand academic texts, they still have difficulties with understanding academic texts. They perform poorly in tests that require higher order skills such as analysis, synthesis and application. They also lack vocabulary and the ability to infer meaning from context, which implies that they focus on the sentence level of the text and rarely use a deeper level approach to reading. In order to address this problem, we have employed the enquiry-based approach to reading and writing in our Academic Communication Skills classes to suit the needs of learners who are mainly young adults who have either just finished their high school or have had a few years of professional work. The Academic Communication Skills programme focuses on developing academic literacy and research skills, particularly reading and writing, which are integral parts of developing academic literacy.

Reading and writing online offer a wide range of reading and writing options. As a result, the programme encourages learners to use different genres and conventions and to be multi-skilled as readers and writers. It allows learners to explore all the cognitive skills as outlined in Bloom's Taxonomy, including critical thinking and evaluation. It is premised on the theory of constructivism which encourages learners to be personally involved in knowledge construction and to collaborate with peers in this process. Learners develop text analysis skills, vocabulary, filter skills and skills to infer from context. They practise skimming and scanning, and learn to paraphrase and summarize texts.

It should be noted though that reading and writing online is more demanding on learners as it requires multi-literacies - a shift in approach from a linear to a more interactive reading and writing approach.

Some examples of activities in the Academic Communication Skills programme

The reading class provides learners with texts from different contexts across disciplines. The activities are divided into three phases: the pre-reading phase, the reading phase and the post-reading phase. This approach follows Ogle's KWL (Ogle, 1986) reading strategy. KWL is

an instructional reading strategy that is used to guide students through a text in three steps in the sequence illustrated below:

K: What I **KNOW**. Have students brainstorm what they already know about a topic.↓

W: What I **WANT** to know. Have students brainstorm what they would like to learn about a topic.↓

L: What I **LEARNED** from reading the text. Have students list several things they learned after reading the text.

An alternative to the KWL could be the 5-step SQ3R model in which S stands for Survey, Q for Question, R for Read, R for Recite and R for Review. According to Artis (2008), self-regulated reading training at college and university level, in the form of SQ3R, is beneficial to the learners.

(i) *During the pre-reading session*

Before learners engage in reading, they have to think about reasons for reading a text and bring on board what they know about the subject under discussion and how this relates to their curriculum. To guide this process, learners are given a topic or short text on which they are to find more information. They make a list of questions which they would like to find answers to in relation to the topic. When they have collected their information they make class presentations and bounce their ideas off their peers.

(ii) *The reading phase*

During this phase learners read the text and explain how it clarifies some of the questions they had in the pre-reading activity. They then check if the text answers all the questions they had for the pre-reading activity. They check for the main argument and supporting ideas. They then answer comprehension questions.

(iii) *The post-reading phase*

This last phase provides an opportunity for the learners to ask questions. Learners reflect on the information they have read. They are asked to apply what they have read by discussing new things they learnt from the activities in which they were involved in phases one and two. After this they write a summary of the reading text and are encouraged to raise questions which were not answered during the pre-reading and

the reading phase and discuss these with their classmates. Discussion with peers allows learners to consider which approaches they can use to reach a solution to a problem. This helps recall and retention.

Webquests

Another form of enquiry used in the Academic Communication Skills class is a Webquest. According to Dodge (1995) this is an enquiry-based approach in which information presented to the learners is from the internet. It is designed to "support learners' thinking at levels of analysis, synthesis and evaluation" (Dodge 1995:2). Learners are directed to specific sites to perform a series of tasks in order to develop an understanding of one topic. The learners are also challenged to think about and use appropriate strategies to perform the tasks. The following Webquest on the Supreme Court was designed for learners doing law. The following section gives the main features of a Webquest.

1. An introduction that sets the stage and provides some background information.
2. A task that is doable and interesting.
3. A set of information sources needed to complete the task.
4. A description of the process the learners should go through to accomplish the task. The process should be broken down into clearly described steps.
5. Some guidance on how to organize the information acquired e.g. guiding questions, timelines, concept maps (Marzano *et al.* 1988, Marzano1992; and Clarke 1990).
6. A conclusion to bring closure to the quest. This also reminds the learners about what they have learned.

The Department of Modern Languages (French and Portuguese) experience

French

UNISWA has recently decided to suspend the French programme because of the limited number of applicants. It is hoped that through the conversion from a conventional face-to-face programme to a more dynamic, interactive, e-learning programme this number will be raised significantly in the future. At the moment, as there is only one staff member in the department, and limited work towards e-learning activities has been done.

Portuguese

As the department only started offering a certificate programme in Portuguese in the 2009-2010 academic year, it was easier for us to prepare materials to be included for online teaching. A variety of modules have been prepared and should all be available online soon. The activities include listening exercises for which 4 CDs have been recorded so far (PT101, PT102, PT103 and PT104). Another set of 4 CDs was recorded between June and August 2010, ready for use from August for Year 2 courses (PT201, PT202, PT203 and PT204). These CDs accompany the language use/grammar and the speaking/listening modules. The reading and writing modules have no audio components (mainly due to financial constraints).

The enquiry-based components are proposed throughout all modules. For example, in the PT107 and PT108 modules, where the focus is on writing activities, the students are encouraged to go and seek knowledge about their natural environment and the challenges faced by it, or about HIV/AIDS, malaria and tuberculosis. They do so at their own pace, in preparation for the writing activities proposed during their classes.

Lesson tasks can be linked to any resources that are uploaded to the teacher's server or to those that are readily available on the Internet.

Challenges

The majority of UNISWA learners are from public schools in Swaziland. These schools are often poorly resourced and have few libraries. Therefore, learners have limited exposure to texts of different genres, online learning and interaction, and to technology and e-learning tools such as *Moodle*. A number of research projects have looked at the initial hurdles linked to the introduction of e-learning and *Moodle*.

One main challenge with innovations is affordability and acceptability by adopters, implementers and users. Several studies have looked at the limitations of *Moodle,* and Kumar and Dutta (2011) cite the fact that *Moodle* is more suited for IT experts as it is quite complex to use. They assert that it is difficult for beginner technicians to install and operate. In addition, as *Moodle* does not work by itself; there has to be a course administrator, and teachers and technicians need to create learning materials. It also has a number of security vulnerability points as it stores user data into a cache.

Other challenges include the fact that some students and lecturers are not computer literate, and even though all students go through a Computer Foundations Course during their first year of study at UNISWA and IDE, they may not have been exposed to learning management systems such as *Moodle*. Moreover, some researchers warn of the challenge of LMS adoption, namely the discomfort of the initial implementation. It has been observed, on numerous occasions, that institutional support is crucial for the adoption of an LMS (Black *et al.* 2007: 36), but in most cases there is lack of support due to limited financial resources to hire appropriate staff. Indeed, to underline the essential nature of technical support, Black *et al.* (2007: 38) quote Bersin as saying that "One of the biggest factors that affects overall satisfaction is not satisfaction with the product features themselves, but whether they are getting the right level of support: technical support, service, […]"

Most IDE lecturers also teach fulltime at UNISWA, and may not have the additional time to generate the interactive material for *Moodle*. There is no roadmap or calendar to guide the adoption and implementation process. Neither is there an Open and Distance Learning policy (at UNISWA OR IDE) with a strategy to integrate blended e-learning.

Finally, some challenges are due to attitudes. For example, it seems that there is a considerable degree of reluctance on the side of the teaching staff to adopt more learner-centred and less directive teaching. Also, the gap between students' perception of technology and that of faculty continues to widen, as students and faculty continue to view and experience technology very differently (Horizon Report, 2008). For example, students continue to embrace social technologies like Facebook and similar platforms, while not necessarily accepting e-learning technologies. Such a gap has implications on the challenge that IDE will face with faculty and students when implementing e-learning.

Conclusion

Moodle's use of the classroom metaphor, its sophisticated support for interaction and collaboration, especially in group-work, its support for conventional file management and its general ease of use do, in theory, set the best possible conditions for the broader improvement of student achievement and performance. One key pedagogical aim is

to go beyond the use of an LMS as a document repository, and to use it as an *interactive* learning system, where the emphasis is on student communication, activities, collaboration and exchange in one-on-one, group and class settings.

The initial response at UNISWA has been a relatively rapid uptake and steady stream of requests for *Moodle* course environments. At the same time, UNISWA and the LMS coordination team were acutely conscious of the digital divide experienced by its students. The LMS team also faced difficulties in developing a coherent policy for the use of the LMS by learners and staff. One particular concern is the lack of coherent policy with respect to consistency in instructional design where, until today, pedagogical strategies were designed haphazardly. UNISWA faces ongoing concerns about technical issues; in particular, bandwidth control. A process of analyzing and negotiating appropriate bandwidth requirements for any given course has to be undertaken by the LMS team. This is crucial to the long term viability of the LMS offerings by the University, as the goal of moving all courses online becomes more pressing.

These different advantages and disadvantages then led the researchers to analyze the enquiry-based approach to learning and how far *Moodle* is compatible with building literacy (defined as a broader concept than mere reading and writing) via the enquiry-based approach. In teaching English and foreign languages (French and Portuguese) at UNISWA we concentrate on literacy skills that are composed of, among others, reading and writing skills, visual and information literacy skills. An additional benefit of using *Moodle* is that the learners are automatically acquainted with a variety of technological and electronic literacy skills as well. *Moodle* allows for student-based cooperative learning where feedback can be given regularly and immediately on a 'need to know' basis, as it were. Because of some inbuilt features, *Moodle* offers great opportunities for the development of academic and digital literacy. The most important issue facing the LMS is its relevance to the kinds of initiative-based and authentic learning that it will be used to support. For the LMS to be useful in the new world of e-portfolios, it will have to be integrated into the World Wide Web. Facebook has taught us that learning is fundamentally and irrepressibly social in nature.

The different types of literacy should not be seen to be in competition with each other. It is only when they are seen as complementary that they can be useful for both learners and academic staff. In order to ensure

complementarity of literacy types for the 21ˢᵗ century professional, the researchers recommend further implementation of *Moodle* as UNISWA's LMS, coupled with additional research on its pedagogical benefits.

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