

To Moodle or Not: Way Forward for TVET Institutions

James Kosgey, Anither Rotich & Shadrack Kimutai
Rift Valley Technical Training Institute, Eldoret, Kenya

Abstract

Moodle is becoming popular as an E-learning environment for teaching and learning in TVET institutions. Every passing day the number of TVET institutions implementing Moodle as a Learning Management System (LMS) is increasing. E-learning remains a digital tool that can be used to effectively bring a lasting change in the current educational system. However Moodle as a technology freely availed as open-sourced platform, there are pertinent issues related to its implementation, as compared to traditional blackboard and to whether good use of e-learning technologies would revolutionize teaching and training in TVET institutions. This paper describes the experiences of the authors at Rift Valley Technical Training Institute (RVTTI) in the implementation process of Moodle project in cooperation with Common Wealth of Learning (COL), where a trainer from COL carried out one week long training at the institution, assisting sampled lecturers from all departments to develop a single course unit on Moodle. This research was done with the following objectives in mind: to compare between conventional mode of teaching and teaching with Moodle; to demonstrate how e-learning technologies can be applied to improve both training and learning process in TVET institutions; to find out how Moodle can be used to improve the quality of education in TVET institutions; to establish how Moodle can be used to make the educational system to be more effective and sustainable. Descriptive Comparative research was used to compare the two methods of teaching which are Moodle and conventional mode of teaching where they are described as they are. Purposive sampling was used to select a sample from the targeted population. Document analysis was also used as a mode of data collection. The researchers further describe their experiences in implementing a management information systems course unit in Moodle for Diploma in Information Communication Technology at the institution. The findings indicated that E-learning technologies in TVET institutions remain the only feasible way to ensure continued improvement of quality of teaching and training.

Key words: Moodle, technical and vocational education training, e-learning

Introduction

Moodle is popular all over the world as a Learning Management System (LMS). It is a free, open source software package designed with sound pedagogical principles, to help both educators and researchers to create effective online learning communities. It is quite useful and convenient to set up with some basic databases on a server. With Moodle, it is also possible to teach any class or provide interactive Web pages using it on any Web server platform that supports Personal Home Page, a web programming language. Without any special web editing skills, teachers can both present online materials that are comprehensible and simplify the way students access it using the Moodle interface.

Garcia (2012) asserts that with the use of technology, education is taking a big leap and is changing its paradigms, from a closed model, and teacher-centered classroom to a model more open and student-centered, where the teacher moves from one holder of knowledge for a learning mentor, able to manage diverse discourses and practices as well as stimulate the intellectual capacities of students in the treatment of information available. Development and use of Information Technology (IT) offer TVET institutions with tremendous new possibilities in research and education, and allow greater access to information. As TVET institutions develop and extend their use of IT they enhance their ability to improve the quality of education and meet new challenges. The application of IT in the education and learning process should not be considered a substitute for teachers, but rather an instrument to strengthen their role (Paula, 2012).

At RVTTI different ways to improve the quality of the support and turn the project orientation to be more sustainable has continuously been sought. The possibility of performing e-learning from the internet as opposed to Moodle server accessed locally within RVTTI has initially been explored. Developing a reward scheme for those who successfully implemented teaching through e-learning has also been suggested. However all this are still in progress.

The use of Moodle is being strengthened based on most of its already proven benefits. Even though only a limited set of Moodle features are being used in this project, the great and unexpected benefits that this improvement could have on the students' learning process, in particular, and on the teaching activities and the academic management bodies, in general, will be shown. In this paper only the particular experiences of the cooperation project between Commonwealth of Learning (CoL) and the RVTTI are described; however, all the concepts addressed in this work might be applied as well to different educational contexts and to other TVET institutions.

Literature Review

Dougiamas (1998) developed Moodle for educators from the beginning under a philosophy called Social Constructionist Pedagogy (SCP). He claims that constructivism occurs especially when the learner is engaged in constructing something for others to see. Dougiamas & Taylor (2003) summarize a PhD research project with the application result of theoretical perspectives such as "social constructivism" and "separate and connected of knowing" to the analysis of their online classes as well as the growing learning community of other Moodle users.

Miyazoe (2008) reports a comparative study of two LMSs (Blackboard Academic Suite 7.1 and Moodle 1.7.2) in four blended courses of Encapsulating Security Payload (ESP) and English for Academic Purposes (EAP) at two different universities in Tokyo. The two courses used a semi-identical instructional design and LMS usage for comparative purposes to make the most of synchronous oral interaction and asynchronous written interaction in the target language. The post-course questionnaire focusing on students' evaluation of the blended course design, online interaction, and LMS usability reveals that a higher usability of Moodle over Blackboard in the course designs while the correlation analysis reveals that such a result is related to students' participation in online interaction and appreciation of the blended course delivery over traditional learning.

Kennedy (2005) investigates what advantages Moodle offers over other commercial LMS such as Blackboard from the perspective of the lecturer or the student at Hong Kong Institute of Education and reports that only a partial preference for Moodle over Blackboard implications for pre-service teachers are found after the analysis of institutional evaluations of teaching and a questionnaire. Kennedy (2005) also describes the initial investigations, observations and experiences of pre-service teachers regarding how they have developed design experience for their future teaching roles using Moodle.

Stanley (2007) focuses on vocabulary acquisition in an intensive reading course at Kanda University of International Studies (Tokyo, Japan) while using Moodle. He reports the summary of a student generated glossary that provides students with necessary vocabulary items as well as a variety of opportunities to see the items in different contexts. He concludes that Moodle and its glossary module in particular have been of immense help to teachers while at the same time offering students opportunities to learn vocabulary well beyond the classroom even with limited class hours of learning.

The Purpose of the Study

The main aim of this research was to investigate whether TVET institutions should go the Moodle way or not.

The study was guided by the following specific objectives:-

- a) To compare between conventional mode of teaching and teaching with Moodle.
- b) To demonstrate how e-learning technologies can be applied to improve both training and learning process in TVET institutions.
- c) To find out how Moodle can be used to improve the quality of education in TVET institutions.
- d) To establish how Moodle can be used to make the educational system to be more effective and sustainable.

Research Questions

The study was guided by the following questions:

- a) What are some of the features of Moodle and the conventional teaching methods?
- b) How can Moodle be used to improve training and learning processes in TVET institutions?
- c) How can Moodle be used to improve quality of education in TVET institutions?
- d) What ways can Moodle be used to bring sustainability and to solve current problems facing TVET institutions?

Methodology

The study employed both Quantitative and Qualitative research methods. Descriptive Comparative research was used to compare the two methods of teaching which are Moodle and conventional mode of teaching where they are described as they are. Purposive sampling was used to select a sample from the targeted population. Document analysis was also used as a mode of data collection. The researchers also describe their experiences in the implementation of a Diploma in Information Communication Technology (DICT) Module III Management Information System (MIS) course on Moodle.

Findings

Conventional Teaching Versus Teaching using Moodle

Conventional Teaching

In a normal class teaching, the lecturing task takes place in several phases. Firstly, lecture method is used in order to give as much formal information and detail to the students as possible. A Classroom lecture is also used in order to explain any extra detail that may need clarification. Class assignments are also given out as well as evaluation.

Teaching using Moodle

Teaching with Moodle offers several features, firstly flexible learning is achieved. This means that, even in the absence of a lecturer, students can purely study by themselves and cover the course content. Secondly, Moodle centralizes all the materials that are uploaded to it; this in effect can act as a course materials repository. Effective usage of the platform over time amasses valuable teaching materials in turn make future effort less since most of the learning materials are in place. Furthermore, when made accessible over WAN or internet, lecturers can upload learning materials and students access the content from virtually anywhere with network access. Furthermore, due to stability of internetworking and standardization of the networking protocols, the platform can now be accessed anytime and anywhere. This factor which is more collectively referred to as, availability, is critical and was a challenge when the networking world had dozens of protocols as in the early days on internetworking (1970's -1980's) as described by Holm (1981). Moodle is also bundled with social tools such as Chats, Forums, and Discussions, these make learning remotely interactive and vibrant - just as in a typical class. Other than all these, Moodle also has student assessment utilities such as quizzes and assignments, with automation of evaluation and Grading, a feature that enables students to receive instant feedback and assists lecturers in; student evaluation, attendance monitoring, progress logging and ensure students meet deadlines. Moodle also supports most multimedia capabilities such as a diversity of document formats, videos, audio, and graphics.

How Moodle can Improve Training and Learning Processes TVET

Necessity of extensive lecturer oral dictation time disappears in Moodle, thereby allowing the student to devote the same time to read and in the process understand the learning content and not copying down key points or notes. This then allows the student to pay more

attention and comprehend the concepts, and not on the dictation done by the lecturer. From the lecturer point of view, the workload has been greatly reduced. Furthermore, from the student's point of view, the oral dictation is replaced by any other learning activity.

In Moodle the feedback criterion becomes really unified, ensuring a fair treatment of students. This motivates them to immediately know the result of his proposed solution. Moodle also provides a way to practice problems without the pressure of the continuous presence of the tutor, which is not possible in a normal classroom.

In normal method of teaching, when a class assignment is given out, the lecturer has to move from one student to another, at the time this assignment is running out, the teacher has to rate each student individually before leaving the room. By averaging 5 min per student for a reduced group of 10 students, the last student to be evaluated will wait approximately 45 minutes. In Moodle context, fair and equitable assessment of the students' work is always prompt.

The dictation phase in conventional teaching, on average, takes one third of the total time devoted to the lecture. This time represents a sharp loss for the teachers' and students' time that, ideally, could have been leveraged to do more activities. As a consequence, the time devoted by each teacher to lecturing is highly inefficient. From the student point of view, beyond the lack of optimization of their working time, the training is incomplete, frustrating, and they do not receive instant feedback for their activities such as extra assignments and discussions which are performed outside the class.

Moodle offers several options to support the assessment process in comparison to normal teaching. For instance, keeping a repository of questions of different types (tests, multiple-choice questions, exact text answers, and others), and for each subject module it allows the lecturer to choose for each course a set of questions to be used for assessment. Also, a test generation with randomly selected questions from the repository allows having different evaluative tests for each course or, even, different evaluative tests for each student and thus avoiding eventual copies.

In normal teaching the students have to wait long hours just to get their hands on a copy of the extra lecturer's notes from the college photocopier, a trend noted also in other TVET institutions usually caused by lack of resources. The implications of this is that apart from wasting a lot of time waiting for these copies, the amount of information provided by the lecturer's is kept to a bare minimum for practical reasons. Having all the information online (even locally in the college internal network) and readily accessible would be an important timesaver for all, and would provide students with a wealth of content that they could not have access to before.

Expected Benefits from Learning using Moodle

Use of eLearning in TVET directly affects three stakeholders, namely; students, teachers and management. Other than the above stakeholders, this shift in learning also affects the industry,

education culture, governance amongst others. Focusing on the core stakeholders the following are the impacts:

Students

Students are the biggest beneficiaries of a properly implemented eLearning environment. They are able to access lots of resources related to their field of study and the quality of these resources means that they get to acquire more knowledge in a short time span compared to conventional methods of learning. This in turn gives the learners ample time to read and do more research and in turn consolidate the knowledge acquired. Furthermore, the platform offers great flexibility to learners for instance, a learner may access the learning resources even after the topic has been covered or in some instances before the topic has been covered. This feature has become a necessity and has been widely featured in social platforms. Flexibility in turn defines the quantity of resources to be consumed by the learner to be adequately conversant with a topic or a course. Since learners have varying rates of learning, fast learners can consume little resource to become conversant while slow learners may need more to achieve the same. This cannot be realized in conventional learning and leads to some learners being discriminated due to their learning rates. TVET requires that the learner has ample time to learn and understand all processes and logics regarding a topic and by extension the course, due to the nature of the role of the learner once deployed in the field he/she studied. Therefore, sufficient accuracy, quality, quantity and flexibility of the learning content is a necessity.

Teachers

Teachers also benefit from the eLearning platform. The platform in itself acts as a content management system. Once the teacher has uploaded the initial learning materials and activities into the platform, less effort will be required in future as all the content is already available in the platform. This in turn means that further effort will be in improving the quality of loaded resources rather than increasing its quantity. At the long run, the resources available will be of superior quality and easy to employ in learning. Furthermore, the platform ensures fairness especially, in assessment and accessibility to leaning materials. This is because in eLearning, there are no backbenchers and frontbenchers

Institution Management

Institution management is also another beneficiary. Adoption of e-learning may in turn reduce the constraints on physical infrastructures such as classrooms and libraries. This means an institution can enroll students whose numbers are far much higher than what their infrastructure can hold. Furthermore, the platform ensures that even in absence of an instructor within the institute, an instructor whose location is remote may be employed to teach students within the institution using the eLearning platform.

Conclusions

As TVET institutions continue to implement e-learning platforms such as Moodle, it is quite evident that these technologies are a cost effective way to solve the various challenges such as Lack of lecturers, Shortage of resources, increased need of Technical education and high enrollment rates. Technological considerations in the implementation of e-learning need

also be sought out as part of the LMS strategy. The simply availability of Moodle platforms in itself is not satisfying enough to ensure use, thus the institutional political awareness need to be put in place, this should majorly be before the introduction of e-learning systems.

At RVTTI we sought to create a more encouraging process where already lecturers are sensitized to continue in the development of content through WhatsApp groups. A reward system has also been sought as a good will from the institutional administration. Trainings of untrained lecturers are also continuously being done by Departmental Moodle Champions; this in the long run will ensure every lecturer gets impacted on the same platform. An administrator hereby referred to as an institutional champion or rather 'The Moodler' has also been appointed. This is the relevant person who spearheads the championing process of e-learning implementation. The 'Moodler' guides departmental E-learning champions. The institutional Management information systems officer has also been fore tracked in the guiding of lecturers on the same. All these are to ensure a smooth implementation process.

Overall, the perception of students on learning through e-learning platforms remains positive. As internet progresses and as technology grows rapidly everyday it's high time that TVET institutions make a bolder step in using IT as a changing strategy. It's time to "Moodle".

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