Effective use of collaboration tools in Moodle LMS by Lecturers and Students at South Eastern University of Sri Lanka

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Abstract. In recent years, LMS has become important integral part of Sri Lankan higher educational institutes that greatly influencing in teaching and learning activities specially after the Covid-19 pandemic. There are various commercial and open source LMS systems are available. Most of the Higher Educational Institute in Sri Lanka are using Moodle LMS. Moodle is widely used open-source platform and it contains many activities and resources to support teaching and learning activities. Moodle by default offers collaboration tools such as Wiki, groups, forums and many more and also additional collaboration tools can be installed as external plugins. Collaboration tools are essential for building a community of active learners and share knowledge in a systematic way. This paper attempts to study of the effective usage of collaborative tools in Moodle by both teachers and learners. Teaching staff and students were interviewed at South Eastern University of Sri Lanka from the faculties of Management, Arts & Culture, Islamic Studies and Arabic Language and Technology. This study finds that participants mainly using Moodle as an online source of teaching materials and for conducting continues assessments and that the tools for collaboration are not much utilized. This research study also revealed that many reasons have dampened the usage and commitment of the collaborative features inside Moodle. These may be recognized as structure and user friendliness, reaction speed and a preference for alternative technologies.

Keywords: Moodle**,** Collaborative tools, Online learning, e-learning, Teaching, Learning

1 Introduction

With the rapid growth of classrooms and the technological development the demands and needs of the Higher Educational Institutes (HEI) to capitalize on LMS for learning and teaching activities have significantly increased. There are many such LMS available with different features and capabilities. Moodle, an open-source LMS has been around at most of the HEIs in Sri Lanka, especially after Covid-19 pandemic it has become unavoidable integral part of HEIs. This has often been seen as an attempt for these HEIs to be more operational and to offer teaching resources for a larger number of students. Initially the idea of using LMS was focused on the delivery of course materials to distance and external students and provide access to these students [1]. University of Colombo School of Computing (UCSC)'s BIT degree program was established in this way in year 2000 is an outstanding example. However, LMS has become a key factor of the education system for many students at HEIs and an ever-

increasing combination of face-to-face (F2F) learning and e-learning is now developing. This form of delivery, referred to as blended learning, uses technological advancement to extend the physical boundaries of the classroom, providing access to learning material and resources and increasing the lecturer's ability to receive feedback on learners' progress [2]

Moodle is an open-source learning management system (LMS) that was created in Australia in 2002 and has been accessible since the 1.0 version was published in March 2011. Anyone may become a teacher or a student in a Moodle-based cooperative learning environment. Moodle allows learners to engage in collaborative learning activities such as forums, Wiki, vocabulary, databases, and messaging. The collaborative learning activities of these learners also enhance the experiences of other learners. Moodle, in example, offers a variety of methods for learners to express and share their knowledge. Moodle is also a useful for tracking community learning activities. Through mutual collaboration among members, learners may generate new information on their own and further improve critical thinking and flexible creative problem-solving abilities.

In creating a blended learning environment, an LMS is utilized to run built-in collaborative features like as forums, wiki's and blogs. These technologies, called as web 2.0, are most prevalent to LMSs and having the potential to allow teachers to build a community via the probable communication that may develop. Consequently, a dynamic connection may be established among the usage of online collaborative tools and techniques and individuals that has the capacity to build e-learning societies [3].

This article will explain and evaluate the usage of collaborative resources in an effort to discover the benefits of utilizing LMS collaboration capabilities to build a collaborative community. This study focuses on the collaborative capabilities that come standard with the Moodle LMS, which was utilized at the institution where the research was conducted.

2   Collaborative Tools and Blended Teaching & Learning

The application of digital technology encourages collaboration in blended learning contexts. Generally speaking, the main trend in the current higher education is a blended method which mixes the conventional approach to the classroom with a digital approach. Different research that examine the difference between mixed learning methods and practices examine the variations in the blended mode[4]. Various technologies and resources are utilized to promote interaction amongst students through a comprehensive strategy, including recorded class video, portfolios, online tutorials, wikis and online discussion[5].

The Moodle LMS has been developed to allow teachers to build online courses that encourage students' involvement in an interactive and collaborative environment. The primary goal of Moodle is to assist the instructors to offer better chances to convey the information and for support in gaining knowledge, skills, and experiences. Moodle plays a key role in offering flexibility to meet students' needs, engagement, and incentives [6], [7]. Because the structure of the classroom teaching environment is not regarded as an interactive setting that encourages active involvement and engagement, improving student engagement in higher education is regarded as a recurring issue.

LMSs at universities offer lecturers with a platform that includes built-in collaboration capabilities (such as blogs, wikis and forums) for use in their instructional activities. When these technologies are utilized in conjunction with traditional class setup, the concept of blended learning can be used. In the higher education industry, a commonly used LMS such as Moodle is often used to comprehend this idea of blended learning [8].

The Moodle community website includes examples that illustrate the potential advantages of using the Moodle LMS in higher education. The University of Colombo School

of Computing (UCSC) [9] UCSC has been utilizing Moodle since 1999 and uses its Virtual Learning Environment (VLE) to provide learning materials and all course related notifications for the Bachelor of Information Technology (BIT) degree program. Despite the large number of individuals who use Moodle, Heaton et al [10] stated that learning materials and course related announcements are the most sought aspects of Moodle by lectures and students, not collaborative functions. Although literature highlights the major importance of these technologies, further study [11] shows a much lesser active engagement with these tools by teaching staff and students in the Moodle classroom.

Beckman, Scott, and Wymore (2018) suggest in their study that collaboration offers a range of experiences for pupils and balances openness and reluctance to change [14]. Collaboration also promotes the capacity to link the knowledge of each student. As such, cooperation may be considered to contribute to giving students with a range of experiences and linking various kinds of knowledge. However, students don't have too many chances to participate in highly collaborative activities. In particular, for university students, collaborative activities that take a lot of time leads to increased learning goals are not often utilized as teaching techniques. As online learning is being reinforced, it is essential to discover methods to improve collaborative activities via online learning.

Greenagel[15] state that the growth of collaborative tools that disregard styles of learning could be critical aspect of the inability to engage lecturers and students in using such tools, while Everson state [16] that the interface design and user-friendliness need to be addressed.

By utilizing Moodle collaborative tools and technologies blended learning environment can be enhanced in to a greater extend. Recent study shows the difficulties that educators are facing within universities in dynamically utilizing Moodle collaboration tools successfully. Accordingly, the following research provided on here examines the usage of collaboration tools inside Moodle at South Eastern University of Sri Lanka(SEUSL) that promotes blended learning in all course related activities throughout all faculties.

3 Research Design

3.1 Objectives of the research

The primary aim of this research was to examine how collaborative tools are being utilized inside Moodle LMS for teaching and learning at SEUSL, and to identify the variables that affect their successful use. Moodle is a typical open-source LMS utilized for a duration of eight years in the university.

3.2 Methodology

The research was carried out using both quantitative and qualitative methodologies. Utilizing both methods at the same time, it renders a complete picture of the issue and offers a 'comprehensive study of the research challenge' [17]. Open-ended interviews were performed with participants (teachers & students) and usage data relating to the use of collaborative tools in Moodle were gathered and evaluated. The open-ended interviews offer more significant information being produced by enabling respondents to convey their own perceptions using their own phrases [18], while the combined use data provide a more holistic picture of the research.

3.3 Participants of the research

Both academic staff and students are the participants of this research who were selected from the faculties of Management, Arts and Culture, Islamic Studies and Technology and all studying at SEUSL where the study was performed. The participants were notified about the research and they individually contributed and provided complete permission to take part in the study. Participants were carefully selected to different gender, age and jkowledge.

3.4 Conducting Interviews

Interviews were fixated on the various ways that the participants utilize the collaborative features of Moodle with open ended questions. When no new data was obtained from participants, the number of people questioned was reduced when a saturation level was achieved. Guest[19] showed that saturation typically happens during the first thirty interviews and this is adequate to get a valid result. Total number of 127 participant were contributed to the research.

4 Findings and Discussion

The responses and the statistics on usage of the collaborative tools were the two main sources of data. The results in both of these categories will be shown in this section.

4.1 Conducting Interviews

According to the responses collected in interview, 23 percent of the lecturers questioned used collaboration tools inside Moodle, while 39 percent of the students asked said they used collaborative tools for learning process. Furthermore, many students who had utilized these tools did so just on a few times, if at all. Given that the study's goal was to find out the factors influencing the usage of collaborative tools inside Moodle at SEUSL, the research findings focused on students and lecturers who didn't effectively make use of the collaboration tools.

An examination of the interview answers on the reasons affecting why they did not utilize collaboration features in Moodle could be split into six main groups: interface design and user friendliness, time constraints, alternative tools, unawareness about tools, pedagogical culture, and response time. The parts that follow give a description of the findings and analysis.

4.1.1 Interface Design and User Friendliness

The design of interface and user-friendliness of collaborative tools inside Moodle are the factors for the failure of collaborative tools. More than two-thirds of student (65.37 percent) stated that this was a problem whereas 63 percent of lecturers also considered design of interface and user-friendliness to concern. Design of interface and user friendliness linked to how easy for participants to quickly access and locate features and utilize the collaboration tools. Common opinion from students is that the Moodle is tough to browse and it isn't user-friendly and also lecturers discovered complex processes are required to be done.

4.1.2 Time Constraints

Twenty-three percentage student and fifty eight percent of lecturers think that time availability prevents them from using collaborative tools. Students have not much time

to try out these collaborative tool as they have to complete other course works. Lecturer also think that they have to spend considerable amount of time in preparing and arranging contents with such tools

4.1.3 Alternative technology

A choice for alternative technology that students (49.5 percent) already engaged in highlighted is another element of the student usage of collaboration in Moodle. Students expressed a choice for alternative technologies such as WhatsApp or Google Meet for lesson relevant conversation more efficiently and quickly. They also stated that this alternative tool includes numerous capabilities, 51 percent of lecturers expressed a preference for other collaboration tools.

4.1.4 Unawareness about Collaborative Tools

Unawareness of the availability of various collaborative tools inside Moodle was noted as another issue influencing usage of such tools. This is a reason stated by 46.2 percent of students & 75 percent of educators. Many students consider Moodle as simply a means of accessing instructional contents and get alerts.

4.1.5 Pedagogical Culture

Half (50%) of the lecturers seen that the pedagogical culture as a barrier to the use of collaborative technology in their classes. Teachers also said that they satisfied in using current techniques and that transitioning to alternative technology was difficult task. Alexander and Boud [12] take a similar perspective, arguing these tools aren't utilized in full capacity and practical teaching techniques have considered as a component of online environment.

4.1.6 Response Time

The length of time taken for participants must wait for a response while using Moodle's asynchronous collaborative features is referred to as response time. This was the reason that 48% of university students didn't use any tools. This validates that the findings of other studies [21] that show that a lengthy answer or no answer discourages students from using Moodle's collaborative capabilities.

4.2 Statistical Usage Data

Qualitative data collected by conducting interviews for this research identified reasons related to users' ability to utilize such tools in Moodle LMS. Figure 1 show the average time spent with Moodle by students in entire university and further verified that Moodle is primarily utilized as an web portal for teaching materials (Figure 2).
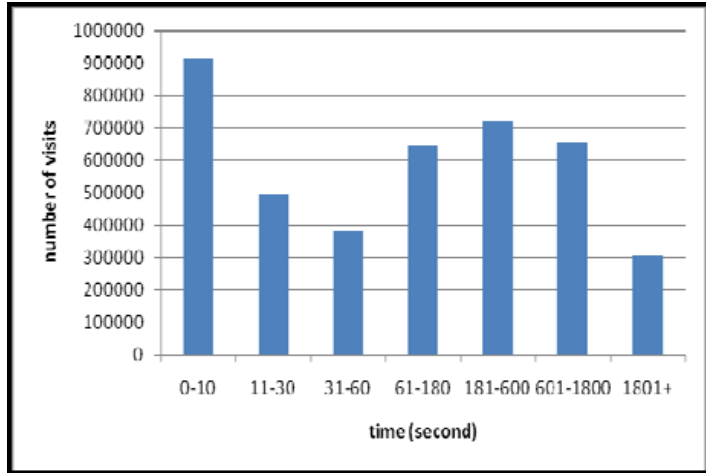
Figure 1: User engagement

Figure 1 illustrates the faculty user involvement in Moodle for a semester. Given user involvement doesn't compare between a user reading and watching learning materials or producing resources and the usage of collaboration technologies. Visits shorter than 40 seconds were discarded since this is regarded as very short a period to suggest a cooperation effort.
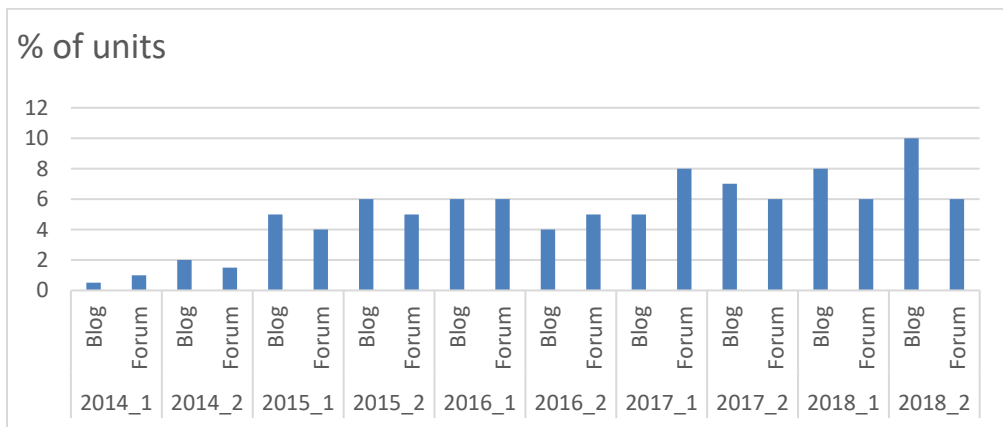

Figure 2: Percentage of courses that use at least one collaborative tool

Figure 2 shows the proportion of units that utilized Moodle collaboration features in the institution. These data are collected over a five year period for each teaching semester and show that 10 percent or fewer of the units taught at the institution utilize some kind of collaborative tools.

The data provided in Figure 2 shows a low proportion of units utilizing Moodle collaborative features. These findings further corroborate and validate the results of earlier research [22; 10] and views that Moodle is utilized primarily as a delivery of contents and never exploited in full capacity.

Both two thirds of students and lectures stated that unpleasant user experience is the most significant factor leading to the lack of utilization of the collaborative capabilities in Moodle. The second issue identified for all participants was related to knowledge of existence of the available collaboration tools, thirdly time restriction for lecturers and reaction time for students. While literature[3] explains the importance of using these tools for collaborative learning, it is evidenced in this study that there would be 10 percent or less units in the university to create these learning communities within Moodle, due to the lack of participant effectively using collaborative tools

5   Conclusion

The necessity of e-learning and LMS is increasing over the time in HEIs for teaching and learning, but it is extremely essential that it must be utilized to promote and support good learning experiences for students and instructors. The sheer availability of collaborative features in an LMS such as Moodle doesn't inevitably translate to their being utilized for teaching objectives. The study confirms the necessity to address the main issues that serve as obstacles to the usage of collaborative tools in HEIs. It emphasizes the necessity to develop computer assisted collaboration tools that promote student engagement to generate collaborative knowledge creation via communities of practice. The success of collaboration tool in LMS such as Moodle is largely dependent on the pleasant user experience which can be accomplished excellent user-friendly interface and greater functionality.

References

[1]   Mason, Robin. "The university–current challenges and opportunities." *D'Antoni, S.(2006). The Virtual University. Models and Messages, UNESCO-IIEP* (2006)..

[2]   Klein, Howard J., Raymond A. Noe, and Chongwei Wang. "Motivation to learn and course outcomes: The impact of delivery mode, learning goal orientation, and perceived barriers and enablers." *Personnel psychology* 59.3 (2006): 665-702.

[3]   Brown, Ann L., and Joseph C. Campione. "Communities of learning and thinking, or a context by any other name." *Contemporary issues in teaching and learning* (2002): 120-126.

[4]   S. Eagleton, ``Designing blended learning interventions for the 21st century student,'' *Adv. Physiol. Educ.*,   vol. 41, no. 2, pp. 203_211, Jun. 2017. doi: 10.1152/advan.00149.2016.

[5]   Luo, Li, et al. "Blended learning with Moodle in medical statistics: an assessment of knowledge, attitudes and practices relating to e-learning." *BMC medical education* 17.1 (2017): 1-8.

[6]   Amandu, Gerald Matua, Joshua Kanaabi Muliira, and Dennis Cayaban Fronda. "Using moodle e-learning platform to foster student self-directed learning: Experiences with utilization of the software in undergraduate nursing courses in a Middle Eastern university." *Procedia-Social and Behavioral Sciences* 93 (2013): 677-683..

[7]   L. Çelik, ``Evaluation of the views of pre-service teachers taught with Moodle during the course named 'instructional technology and material design' on the use of teaching materials,'' Procedia-Social Behav. Sci.,vol. 9, pp. 1793_1797, Jan. 2011. doi: 10.1016/j.sbspro.2010.12.402.

[8]   Pishva, D., G. G. D. Nishantha, and H. A. Dang. "A survey on how Blackboard is assisting educational institutions around the world and the future trends." *2010 The 12th International Conference on Advanced Communication Technology (ICACT)*. Vol. 2. IEEE, 2010.

[9]   Andersson, A., & Hatakka, M. (2010). Increasing interactivity in distance educations: Case studies Bangladesh and Sri Lanka. Information Technology for Development, 16(1), 16-33.

[10]   Heaton-Shrestha, Celayne, et al. "Learning and e-learning in HE: the relationship between student learning style and VLE use." *Research Papers in Education* 22.4 (2007): 443-464..

[11]   Green, Sue M., et al. "The development and evaluation of the use of a virtual learning environment (Blackboard 5) to support the learning of pre-qualifying nursing students undertaking a human anatomy and physiology module." *Nurse education today* 26.5 (2006): 388-395..

[12]   Alexander, Shirley, and David Boud. "Learners still learn from experience when online." *Teaching & Learning Online*. Routledge, 2018. 3-15..

[13]   Guri-Rosenblit, Sarah. "Eight paradoxes in the implementation process of e-learning in higher education." *Distances et savoirs* 4.2 (2006): 155-179..

[14]   Beckman, S.; Scott, S.J.;Wymore, L. Collaborative Innovation: Exploring the Intersections among Theater, Art and Business in the Classroom. J. Open Innov. Technol. Mark. Complex. **2018**, 4, 52.

[15]   Greenagel, Frank L. "The Illusion of e-Learning: Why We Are Missing Out on the Promise of Technolo." *E-learning* (2002).

[16]   Everson, Michelle. "10 Things I've Learned About Teaching Online." *Elearn* 2009.9 (2009).

[17]   Creswell, John W., and J. David Creswell. *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications, 2017..

[18]   Tashakkori, Abbas. *Foundations of mixed methods research: integrating quantitative and qualitative techniques in the social and behavioral sciences*. Sage Publications, 2009.

[19]   Guest, Greg, Arwen Bunce, and Laura Johnson. "How many interviews are enough? An experiment with data saturation and variability." *Field methods* 18.1 (2006): 59-82.

[20] Bradford, Peter, et al. "The Blackboard learning system: The be all and end all in educational instruction?." *Journal of Educational Technology Systems* 35.3 (2007): 301-314.

[21] Jones, Norah, et al. "Get out of MySpace!." *Computers & Education* 54.3 (2010): 776-782.

[22] Green, Sue M., et al. "The development and evaluation of the use of a virtual learning environment (Blackboard 5) to support the learning of pre-qualifying nursing students undertaking a human anatomy and physiology module." *Nurse education today* 26.5 (2006): 388-395.