Efficacy of Moodle Forum in Teaching and Learning

Min Prasad Gurung, Melbourne Institute of Technology, Australia
Rajan Kadel, Melbourne Institute of Technology, Australia

Abstract

Lecturer-centered pedagogy of teaching and learning is becoming less effective to deliver courses. This paper will examine the efficacy of forum to attain higher retention and better learning outcomes in the higher education sector. Focus is also on how to improve students' participation and engagement using forum as a tool - a factor all employers and academic institutions expect of current students. Thematic analysis indicates that the design of Moodle application with device responsiveness and user-friendliness contributes to enhance the use of forum. Research outcome also shows that the inclusion of forum as formative assessment in all the units in their program assist to improve effectiveness of forum use.

Keywords: Moodle, Forums, Teaching and Learning

iafor

Introduction

Teaching and learning recently face a lot of challenges in present context regardless the size of learners, area of knowledge or the institution – public or private alike. Major issues impeding the welfare of all stakeholders are low student retention, low progression and high attrition rate. Scholarship of Teaching and Learning (SoTL) is tools used by academician and academic institute to mitigate those risks if not eliminated.

SoTL is perpetual inquiry into teaching and learning practices to engage, motivate and retain students (Felten, 2013; Hubball & Clarke, 2010; Kern, Mettetal, Dixson, & Morgan, 2015; Starr-Glass, 2011). As the time evolved, there existed a number of activities related to SoTL: Learning Management System (LMS), e-learning, online learning, problem based learning, project based learning, flipped learning and forum and discussion blog integrated within LMS are just a few to mention.

LMS are of different kinds and two popular LSM are Moodle and Blackboard. A comparison study of these LMSs are found at (Bremer & Bryant, 2005). The history of Moodle dates back to 1999. Since then, it is ever evolving and now it is in current form of version. Many Australian Universities have adopted Moodle as LMS. Regardless the name, both systems consists of repositories of teaching and learning resources including but not limited to quizzes, forums, blogs, wikis and other assessments and modules to mark various assessments online. Melbourne Institute of Technology (MIT) has adopted Moodle as its LMS. The version of Moodle used during this research work is "Moodle 3.4.1+ (Build: 20180308)". Moodle provides variety of engagement tools including forum in the current version.

Forum is defined as an online space to promote communication among multiple stakeholders such as instructor and students. Moodle forum provides various benefits including able to create dynamic webpages that allow content contributions from the stakeholders, able to link to a particular posting – technically known as permalink, export to Word application, able to view the discussion by all users regardless their contribution and it also support cut off time to edit the post. Besides those all benefits it has some drawbacks. Moodle forum is unable to post additional materials directly to discussion. Extra materials that contributes to richness of information/post is not possible (for example images and other auxiliary documents need to be downloaded as attachment) this drawback directly hampers the testers to test its usability. In addition, image only posting is impossible – it always have to be accompanied by corresponding text.

Moodle supports different type of forum activities including a standard forum for general use, a single simple discussion, each person posts one discussion, question-and-answer forum, and standard forum displayed in blog-like format. In this research work, we have selected question-and-answer forum of the moodle.

Research Background

MIT, now well over 15 years in business as private higher education provider boast multiple streams of Masters and Bachelor's Degree courses in IT, Business and Engineering. In addition, MIT also run both IT and Business courses affiliated with

Federation University Australia. It houses mostly international students and few domestic students.

Our experience indicated that the majority of international students at MIT are unfamiliar of teaching pedagogy adopted in Australian Universities/Institution. They make a big jump from purely lecturer-centered pedagogy where lecturer takes the lead of teaching with zero input from the learners to active learning where lecturer is nothing more than a facilitator (though there are many institutions depending much on PowerPoint presentation).

In addition to pedagogical gaps in teaching and learning, international students are also burdened by task of cultural assimilation process (e.g. doing and presenting assignments on time, getting involved in active learning, referencing skills etc.). They also face myriads of other problems such as working part-time to cover basic living and tuition fee and full-time study that is a requirement from Australian immigration department.

Experience shows international students lacks knowledge of use of LMS of any form/types. Consequently, students need to rely on rot-memorization of contents from the PowerPoint slides pushed to them by their respective lecturers. The gap of culture of teaching and learning prevalent in Australia along with many problems mentioned above results in low pass rate, low progression rate and high attrition rate.

In this research work, we are evaluating the effectiveness of the forum in the context of teaching and learning and possible remedies to enhance the use of Moodle forum. Therefore, the outcome from the research work will contribute to mitigate the problems including high attrition and low retention.

Related Works

In this section, a brief review of current literature is performed to understand the scenarios of use of forum in student teaching and learning. The paper (Muñoz, Delgado, Rubio, Grilo, & Basto-Fernandes, 2017) presents usefulness of forum or discussion to improve and promote student engagement in teaching and learning. The authors use social network analysis technique during the analysis. The authors in this paper (Pong-inwong & Rungworawut, 2012) analyzed the student attitude to toward instructor during teaching and learning using data mining technique. The authors presented the effectiveness of student perception and opinions on forum discussion in (Martinho, Almeida, & Teixeira-Dias, 2014). The paper (Yang & Lin, 2010) examines the relationship between students' perceptions on internet and their online contribution an online writing for exchange program for nursing students. The study found that there is a strong correlation between students' perception on internet and online participation during learning.

Research Methodology

This research work is performed using qualitative research methodology using thematic analysis. The research process is shown in Fig. 1 and it involves several steps:
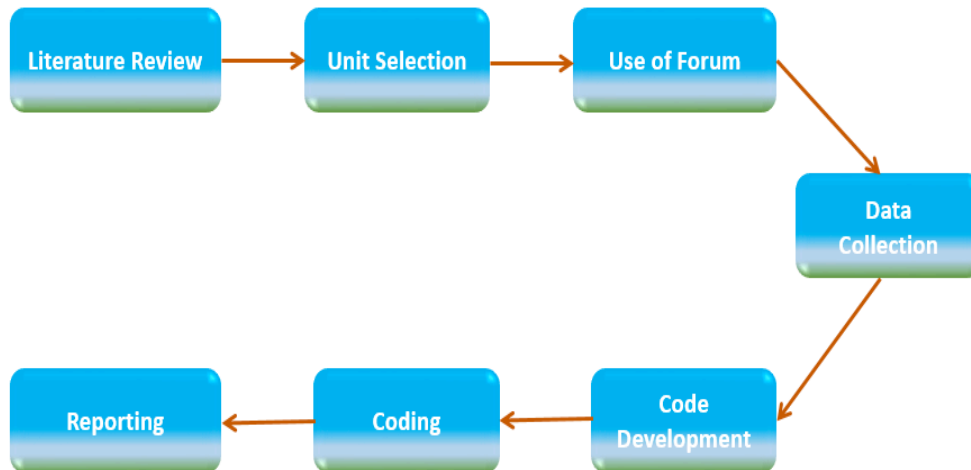

Figure 1: Research method used

i.   Literature Review: A review of current literature on SOTL, use of LMS specifically use of forum in teaching and learning is conducted.
ii. Unit Selection: Web System of Bachelor of Networking (BNet) is selected for testing effectiveness of forum at MIT.
iii. Forum: Students are advised about the use of forum on the selected unit at the beginning of the semester. No mark allocated for forum discussion as it is an optional for the student but student are encourage to use during the semester for discussing several issues. Most of the student make response on the forum discussion once but the frequency of use of forum discussion is very low. Therefore, the focus of the research lead to why the student used once forum but not multiple times on the Moodle.
iv. Data Collection: The data is gathered from students using semi-structured individual interview and group discussion at the end of the semester (Gill, Stewart, Treasure, & Chadwick, 2008). The semi-structure interview allows a balance between the flexibility of unrestricted interviews and the application of a structured survey whereas opinion seeking group discussion is conducted to acquire the problems and ideas informally (University). Researchers collected the data from the individual interview and group discussion using notes taking in diary manually. The interview and group discussion is focus on the following broad areas:
   a. Previous experiences with LMS and forum.
   b. Difficulties and problem associated with forum- technical aspects.
   c. Difficulties and problem associated with forum- academic and general aspects.
   d. Any other contributing factors.

v. Thematic Analysis and Reporting: The thematic analysis is performed using following steps (Maguire & Delahunt, 2017; Nowell, Norris, White, & Moules, 2017; Thomas & Harden, 2008):
   a. Familiarizing with data: First, the data from the individual semi-structured interview and group discussion is gathered from both researchers. Then, both researchers read those collected data extensively before generating initial codes.
   b. Generating initial codes: Initial coding is performed manually as the number of participants are less than 15. For each participant student, researchers prepare a table with data item and initial codes during this process using colored pen independently.
   c. Searching for themes: The theme is generated using repetition, similarities, differences and pattern in the data. The themes are generated by both the researchers independently.
   d. Reviewing and naming themes: The themes generated by both researchers are compared and adjusted after discussion for consistency. Finally, the themes are generated and named.
   e. Report writing: Finally, the outcome from the thematic analysis is conveyed in form the writing.

Findings and Discussion

The outcome from the thematic analysis is presented in Fig. 2. The thematic analysis indicates that the effectiveness of the forum is broadly measured by technical and academic factors. The key technical constraints raised by student on effectiveness of forum is user-friendliness and device sensitive on the Moodle application. The notification of Moodle forum is performed by emailing to student on student email account only when there is new forum question is posted. The students expect that they are notified on personal email as soon as new post is made available on forum. They would even more appreciative if they receive SMS one their mobiles. This will ensure students are instantly alerted and prompted for quick response on the forum discussion. Another concern raised by student is that the Moodle email notification process is slow.

Another technical issue raised by students for poor response is device responsiveness. Many students convey that mobile devices are used for study and instant response such as forum discussion and social conversation. Additionally, many students lack proper laptop and desktop in their residence. Above suggestions strongly warrants a need of web-based Moodle application - an app similar to Facebook Messenger with instant alert system.

The key academic and general constraints raised by students on effectiveness of forum is its non-formative nature and previous experience of their senior fellows. Students raised issue of no mark allocation for forum and it is optional as negative contributing factor. In addition, student raised issue of using forum on only in one unit of the course (program) as contributing factor for the poor response. Therefore, students suggest to apply this approach to all of the units with some marks allocation as one of the formative assessments. Furthermore, some student raised the issue of lack of proper knowledge on the use of forum on Moodle. Therefore, student expects a short training on the use of forum on Moodle before implementation. Some students

provide opinion that another contributing factor for poor response on Moodle forum is negative feedback from the previous students. Negative feedback from previous student means they have not used earlier and may not require to use.
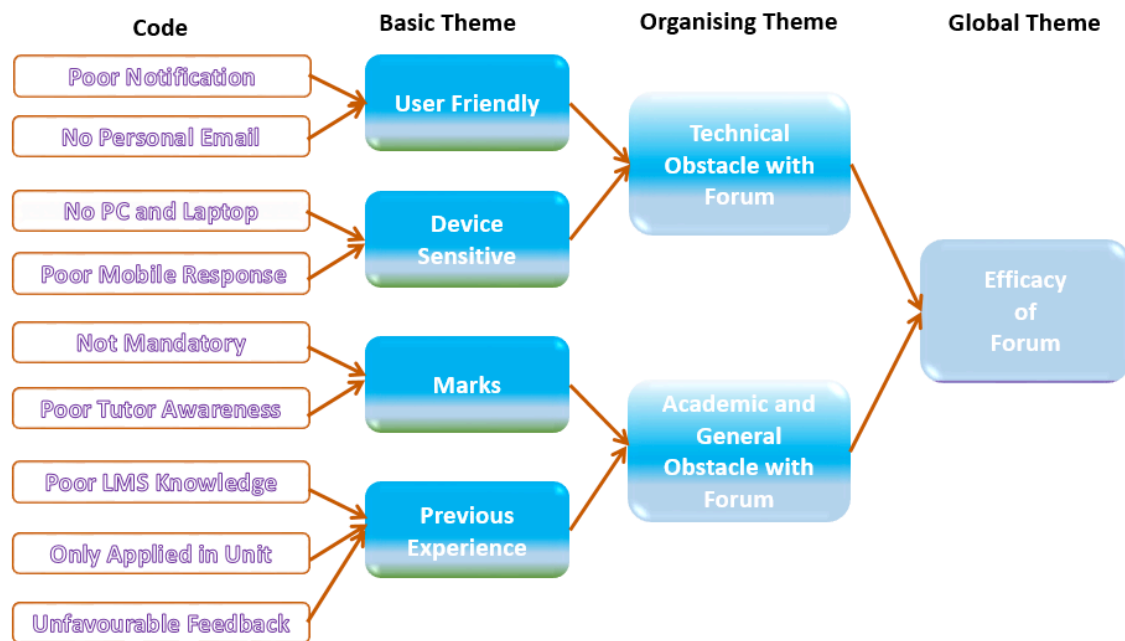

Figure 2: Thematic outcome from the analysis

Conclusion and Recommendation

We have conducted the effectiveness of forum on the private education provider with mostly international students and observed that there is good response rate from the student on the forum discussion once but the frequency of the response is very low. Then, we shifted focus on analyzing the cause of poor frequency of response on the Moodle forum discussion. To determine the cause, we conducted individual interview and group discussion. Next, we perform thematic analysis of data and capture the themes for poor effectiveness of the forum in our research context.

The thematic analysis indicates that there are two major causes for low frequency rate of student response on the forum discussion. First, the analysis reveals that the web-based Moodle application lacks of responsiveness to the variety of devices and very poor notification systems in technical side. Second, the absence of allocation marks for forum discussion and the application to only one unit on the whole course contribute to undesirable outcome on the forum participation.

The outcome from the thematic analysis recommends that the institute should develop Moodle app similar to Facebook Messenger that has instant notification and messaging system. Alternatively, device responsive web-based Moodle application with instant notification as SMS or email notification to private email instead of student email. These are two recommendations in technical aspects to enhance the forum participations. Furthermore, student also mentioned that Moodle forum should applied to all units and marks should be allocated for forum participations to improve the participations on forum.

Acknowledgments

References

Bremer, D., & Bryant, R. (2005). *A Comparison of two learning management Systems: Moodle vs Blackboard.* Paper presented at the Proceedings of the 18th Annual Conference of the National Advisory Committee on Computing Qualifications.

Felten, P. (2013). Principles of good practice in SoTL. *Teaching and Learning Inquiry, 1*(1), 121-125.

Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: interviews and focus groups. *British dental journal, 204*(6), 291.

Hubball, H., & Clarke, A. (2010). Diverse methodological approaches and considerations for SoTL in higher education. *Canadian Journal for the Scholarship of Teaching and Learning, 1*(1), 2.

Kern, B., Mettetal, G., Dixson, M., & Morgan, R. K. (2015). The role of SoTL in the academy: Upon the 25th anniversary of Boyer's Scholarship Reconsidered. *Journal of the Scholarship of Teaching and Learning*, 1-14.

Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *AISHE-J: The All Ireland Journal of Teaching and Learning in Higher Education, 9*(3).

Martinho, M., Almeida, P. A., & Teixeira-Dias, J. (2014). Fostering students questioning through Moodle: does it work? *Procedia-Social and Behavioral Sciences, 116*, 2537-2542.

Muñoz, A., Delgado, R., Rubio, E., Grilo, C., & Basto-Fernandes, V. (2017). Forum participation plugin for Moodle: Development and Discussion. *Procedia Computer Science, 121*, 982-989.

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*(1), 1609406917733847.

Pong-inwong, C., & Rungworawut, W. (2012). *Teaching evaluation using data mining on moodle LMS forum.* Paper presented at the Information Science and Service Science and Data Mining (ISSDM), 2012 6th International Conference on New Trends in.

Starr-Glass, D. (2011). Reconsidering Boyer's reconsideration: Paradigms, sharing, and engagement. *International Journal for the Scholarship of Teaching and Learning, 5*(2), 21.

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC medical research methodology, 8*(1), 45. University, T. O. 6 Methods of data collection and analysis. *Monitoring, Evaluation, Accountability and Learning (MEAL).*

Yang, Y., & Lin, N. C. (2010). Internet perceptions, online participation and language learning in Moodle forums: A case study on nursing students in Taiwan. *Procedia-Social and Behavioral Sciences, 2*(2), 2647-2651.

Contact email: mingurung@mit.edu.au, rkadel@mit.edu.au