

Experience with an Online Discussion Forum: The Case of an Undergraduate Biostatistics Class in Iloilo City, Philippines

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Abstract: This paper documents the experience of an undergraduate Biostatistics class in using a free Learning Management System (LMS) to facilitate asynchronous discussion in an Online Discussion Forum (ODF) that supplemented face-to-face classroom discussion. Results reveal that the ODF was generally appealing to students because they were provided the time to research about, and think of, their responses due to the asynchronous nature of the ODF. Moreover, the ODF generally allowed everyone to participate in the discussion, stimulating a more dynamic learning environment even outside the physical classroom. However, learners pointed out that their inability to manage their time, along with a lack of regular internet connectivity are major reasons why they were unable to keep up with the deadlines set for responding to the ODF.

Introduction

Asynchronous and synchronous online communication tools are features of computer-mediated communication (CMC) that have consistently been used to facilitate instruction and learning since the advent of the Internet. Computer-supported collaborative learning (CSCL) proposes that the Internet provides learners with a venue to engage in collaborative interactions, which may lead them to developing socially-contextualized ideas and culturally-proximate experiences that are essential in meaning-making and, consequently, learning. However, many learners from a developing country like the Philippines still face the challenges of affordable access to technology and thus, one must not be hasty in immediately integrating or rejecting the use of network technologies as an add-on to traditional instruction, especially in the beginning of the development phase of e-learning, specifically mobile learning, as a transformative medium.

It is becoming more and more practical in today's digital age for educators to acknowledge the urgency of the need for designing and implementing learning innovations in order to improve instructional methodologies. This research initiative aims to fill a gap in existing local research literature by investigating the merits of supplementing traditional instruction with opportunities for mobile learning through the use of CMC. In particular, this study documents the reactions of learners in a biostatistics class that participated in an online discussion forum (ODF) in a web-based learning management system (LMS) as a supplement to regular face-to-face instruction.

M-Learning

With the advancement and accessibility of mobile technologies such as laptops, smartphones, tablets and other mobile devices, m-learning or mobile learning has been adopted by numerous academic institutions in addition to, and in place of, traditional face-to-face instruction. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has defined mobile learning as the use of mobile technology to enable learning through the use of mobile devices in creating or accessing educational resources, or as a means of communication both inside or outside the classroom (UNESCO, 2013). Mobile devices in the classroom can be used to enhance individual or group learning among students through communication applications, interactive displays, and video features. Beyond the usual classroom setting, mobile devices with the help of the internet, can be used for distant learning in a form of exchanging educational resources online or through online discussion to facilitate teacher-student or student-student communication.

In a developing country like the Philippines, many areas still lack the access to affordable technology. Moreover, reports indicate that the country has one of the slowest (3.6 mbps on average) and most expensive (roughly \$45 a month for 5 mbps speed) internet connections compared to its Southeast Asian neighbors (Macaraig, 2014). These limitations, among others that have yet to be identified, have deterred teachers and learners from incorporating mobile learning in the form of computer mediated communication in instruction during the past decade and as such, one may say that its adoption is still on the development phase.

The Research Setting

The academic institution where this study was conducted is located in Iloilo, Philippines. Students have most of their classes from Monday to Friday in the main campus, which is located 40 km away from the city campus,

where the face-to-face component of their Biostatistics class was conducted. The university has a Teaching and Learning Resources Center (TLRC), which provides learners with access to learning technologies. During an online interview, the university's TLRC staff said that the university provides students with internet connection in two ways: free computer use or wireless internet access.

Students may use computers with internet access through the TLRC by presenting their university ID's. There are a total of 30 computer units that the students may use during weekdays from 8 A.M. to 5 P.M. Fifteen (15) computers are located at the TLRC office near the university cafeteria while the other 15 are located at the Interactive Learning Center (ILC) in the College of Arts and Sciences Building where most of the classes are located. However, students are only allowed to use the computers in a maximum of 30 hours per semester. For students who are doing their thesis, they are provided with an additional 15 hours of free computer use. According to the TLRC staff, only around 80% of the student population avail of this service and the busiest time is during the examination period.

For students who have wifi compatible devices such as laptops, smartphones, or tablet computers, they can have wireless internet access by registering with the Data and Information Systems Program (DISP) that provides them with instructions for accessing the internet. There are several access points in the campus such as in the dormitories, staff houses, college buildings, and administrative offices. Wifi access is available 24 hours a day and seven (7) days a week.

In addition, some students in the dormitories and other off-campus residences pool their finances together to have an internet connection. Other students have portable wifi devices while others still use their mobile phone data connections.

There are also off-campus internet shops that offer the use of internet-connected computers for a fee, although these shops are typically open only from 7 A.M. to 10 P.M.

The Intervention

The study involved undergraduate students ($n = 26$, 16 females and 10 males) from an intact Biostatistics class (laboratory component) of a university in Iloilo, Philippines. Of these, only 21 (13 females, 8 males) were able to participate in evaluating the Online Discussion Forum (ODF). Their average age was 18.1 years ($SD = 0.27$). The students belong to the BS Public Health degree program and almost all of the participants belonged in the middle and upper socio-economic classes. The students were treated ethically, in compliance with the standards set by the American Psychological Association (1992). Names used in this paper are not the actual names of the participants.

The study was conducted for one semester, over a period of 16 weeks. During the class orientation, the students were informed that they would be required to participate in an online discussion forum where they had to respond to prompts posted by the teacher. The online discussion forum platform of Canvas Instructure (<https://canvas.instructure.com>), an open-access, web-based learning management system, was utilized for this study.

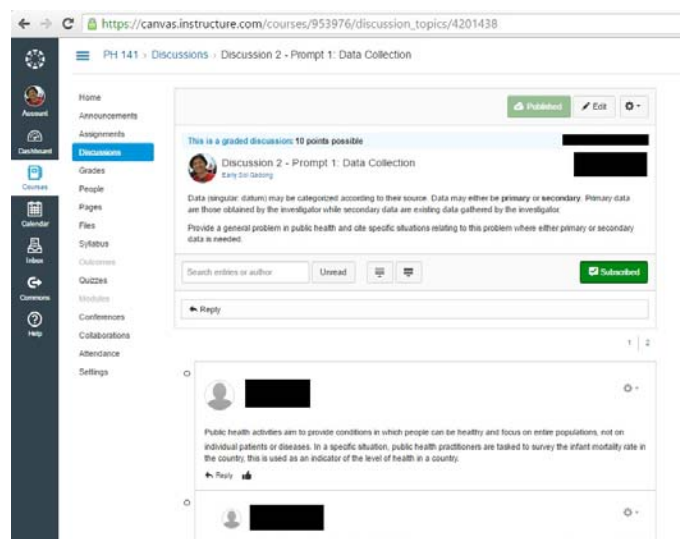


Figure 1. A screen cap of the Canvas platform used in this study.

The initial prompt required students to introduce themselves to each other. Then, there were a total of six (6) Discussion Periods, each lasting for two weeks, with two prompts for every period. Figure 1 shows a screen cap of the platform.

“Discussion periods” start on the Sunday of the first week, with the teacher posting a prompt on two separate threads at 12:00 P.M. Students’ posts may be a response to the teacher-posted prompt, a response to a fellow learner’s post, a question related to the topic at hand, posed to either the teacher or to fellow learners, or a new idea altogether. Students have to make at least three posts in each prompt within the Discussion Period. While students may make more than one posting in a day, they were instructed to post on at least three different days.

Discussion of Results

Results reveal that the ODF was generally appealing to students because they were provided the time to research about, and think of, their responses due to the asynchronous nature of the ODF. Moreover, the ODF generally allowed everyone to participate in the discussion, stimulating a more dynamic learning environment even outside the physical classroom. However, learners pointed out that their inability to manage their time, along with a lack of regular internet connectivity are major reasons why they are unable to keep up with the deadlines set for responding to the ODF. Users likewise shared suggestions for improving the platform and the overall experience of using the system. General themes that emerged from their responses are discussed in more detail below.

The convenience of asynchronicity

Davis, Bagozzi, and Warshaw’s (1989) technology acceptance model (TAM) lists *perceived ease of use* as a determinant in predicting the acceptance of new technology. This was reflected by findings of this study as students shared that the mobile nature of the ODF allowed them to answer the forum on their own time, consequently allowing them to learn on their free time. Additionally, because of the asynchronous nature of the ODF, students appreciated that they could edit, delete, or add on to previous responses, after they have had more time to think about the given prompt.

“I get to have time to think of the appropriate responses to the questions.” – Alexa

“[What I like most about the ODF is] the accessibility of it. The students can answer the forum on their own time, which is good because of the academic load we have. We’re able to learn on our free time.” – Bea

Opportunity for more student participation and independent learning

Another determinant in predicting the acceptance of new technology is *perceived usefulness* (Davis, Bagozzi, & Warshaw, 1989). All of the respondents agreed that the presence of the ODF provided opportunities for appropriate instructor-student and student-student interaction to foster mastery and application of the material and a plan for monitoring that interaction. In addition, only one (1) student said that the ODF did not assist in the learning of the course. This was evident in student responses that mentioned how the ODF provided a venue for learning to occur outside a physical classroom and that it generally allowed everyone to participate in the discussion, stimulating a more dynamic learning environment.

“It made me learn more about the topics through research and also, it made me understand the topics more because I really make an effort when answering the prompts. I look for answers in Statistics books and sometimes in the internet.” – Carlo

“[The ODF] gives an equal chance to all students to express themselves. Most of us are really not into talking much in class. It is a great platform to express our ideas and questions.” – George

“[The ODF] provided [for] exchange of ideas that can be made outside of the classroom.” – Kendra

“[The ODF allowed us] to discuss certain topics in Statistics with [our] classmates online. In fact, I was able to learn from my classmates’ responses and discover some facts about Statistics from their comments.” – Pia

Reactions to the Canvas platform

All of the students surveyed somehow agreed that the online forum was easy to navigate, and only one (1) participant did not find the platform enjoyable. This was supported by responses that enthused about how the ODF facilitated discussions.

“What I like most about the discussion forum is that it allows you to put in other sources of media to facilitate better the presentation of information. It is also easy to navigate around and is user-friendly.” – Ignacio

However, a deeper look into the responses revealed that students actually faced a number of issues with the platform.

“What I like least about the online discussion platform is that I had a hard time scrolling [through] the previous responses of other participants. There was also an unorganized way of posting the threads since some did not actually try to read [other students’] responses. This led to other information being repeated a couple of times.” – Winona

Students provided suggestions that could address the issues they faced with the platform.

“It would be nice if there [were] a reminder or warning telling you [that you] haven’t answered this or that prompt.” – Henry

“The discussion platform could be improved by creating an application that would help the participants remember the main ideas of the topics being discussed in that particular week. It would also be helpful if there was a mobile application reminding the participants of their assignments.” – Winona

“[I hope we would be] able to upload pictures and files without the need for an external link.” – Regine

Issues and challenges

Student responses pointed to a number of issues with the use of an ODF. One of these is time management issues.

“Because of many exams and assignments from other subjects during weekdays, sometimes I don’t have time to answer the prompts.” – Pia

Students were also quite frustrated with the lack of access to the internet, and the slow internet connection.

“[The ODF] required internet connection which is sometimes difficult to access in the campus.” – Oscar

“There’s actually nothing wrong with the platform. The only problem is the availability of internet [connection].” – George

“What I like least about this online discussion platform is the fact that it’s dependent on ... our ability to access the internet. For me, classroom discussions are still more advisable because we don’t have to rely on internet speed and signal strength in order to participate well in a discourse. There might be times that the internet connection requirement for this online forum is hard to access.” – Lani

“When internet was not available, I was unable to meet the deadline of the first response on some occasions.” – Nadia

A number of learners suggested revisions to the posting protocols for the ODF. Generally, students wanted to have a longer time to respond to the prompts. Some also suggested requiring fewer prompts to respond to in a discussion period. Others suggested imposing stricter rules in limiting lengths of posts.

“[I suggest being given] more weeks to answer [fewer] prompts, maybe because sometimes it is time-consuming.” – Carlo

“[I suggest extending] the deadline of the first response.” – Nadia

“Setting a limit to the number of characters for the comments would also be a good idea because I noticed that a lot of posts were longer than they should be, even though they could really be expressed in a shorter manner through paraphrasing.” – Lani

Computer-supported collaborative learning theory (CSCL) insists that while the teacher in an online learning environment may turn to posting relevant content to facilitate instruction, the teacher also plays a crucial role in motivating and guiding students (Stahl, Koschmann, & Suthers, 2006). Thus, a learning environment must be well facilitated, and the quality of discussions in a face-to-face or online setting is dependent on the prompts given. Some students voiced out a need for improved quality of prompts, as reflected in the following responses.

“[I suggest] having more engaging topics for the forum.” – Tricia

“I suggest that the questions [be] more specific. Sometimes, [they’re] too vague.” – George

Participation in the online discussion forum

Largely due to the fact that participating in the ODF was a class requirement that had an impact on their final grade, only one (1) participant completed less than 60% of the required responses. Moreover, 81% (n = 17) claim that at least 60% of their responses were written in their own words.

Out of the 21 participants, only 14.3% (n = 3) did not want the ODF to be part of their regular Statistics classes. The same percentage of participants did not want a similar platform in other classes.

Conclusions and recommendations

Bandura’s social learning theory (1971) proposed that cognition develops through social activities. The paradox of mobile learning is that while it occurs with learners not being physically together, it provides an opportunity

for an accessible and convenient way for learners to interact. Findings of this study reveal that sampled students welcome the use of an ODF in a web-based LMS to aid in learning as long as reliable internet connectivity is guaranteed and parameters for posting are reasonably set. The ODF was generally appealing to students because they were provided the time to research about, and think of, their responses due to the asynchronous nature of the ODF. Moreover, the ODF generally allowed everyone to participate in the discussion, stimulating a more dynamic learning environment even outside the physical classroom. As such, the platform used in this study may be seen as successful in terms of providing learners with a venue to collaborate with, and learn from, one another. This is especially important in the advent of the digital age.

However, learners pointed out that their inability to manage their time, along with a lack of regular internet connectivity are major reasons why they are unable to keep up with the deadlines set for responding to the ODF. These findings reflect that mobile learning may be used as supplement to instruction for learners and learning environments that exhibit similar characteristics to those in this study.

Findings likewise reveal that the success of the discussion, whether online or offline, is still largely dependent on how the teacher designs the initial prompts and how frequent she responds and moves the discussion along. Perhaps it is also worth investigating just how much actual time a teacher would need to spend on a discussion thread, and develop a corresponding equivalence for face-to-face interaction.

Additionally, this study has some limitations that create opportunities for future research. A bigger and more representative sample of the population may be investigated, in order to capture a more reliable picture of how learners view mobile learning.

References

- Bandura, A. (1971). *Social learning theory*. New York City, NY: General Learning Press.
- Brown, J. S., & Duguid, P. (1996). Universities in the digital age. *Change*, 28(4), 11-19.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35, 982-1003.
- Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st century: A framework for research and practice*. New York: NY: Psychology Press.
- Macaraig, A. (2014, April 22). *Probe slow, expensive PH Internet – Bam Aquino*. Retrieved April 26, 2015, from Rappler: <http://www.rappler.com/nation/56078-probe-slow-expensive-internet-ph>
- Stahl, G., Koschmann, T., & Suthers, D. (2006). Computer-supported collaborative learning: An historical perspective. In R. K. Sawyer, *Cambridge handbook of the learning sciences* (pp. 409-426). Cambridge, UK: Cambridge University Press.
- Tham, C. M., & Werner, J. (2005). Designing and evaluating e-learning in higher education: A review and recommendations. *Journal of Leadership and Organization Studies*, 11(2), 15-25.
- UNESCO. (2013). *Policy guidelines for mobile learning*. Paris, France: UNESCO.
- Zheng, R. (2013). An investigation of perceptual differences between Eastern and Western students in online social communication. *Journal of Educational Computing Research*, 49(4), 501-526.