

Synchronous and Asynchronous Engagement on Moodle in an English Course Offered through Blended Mode

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ABSTRACT: Learner engagement is a crucial component of the teaching learning process. More emphasis is placed on learner engagement with the introduction of technology-based learning. Learner engagement with the content, instructor, other learners, learning environment, assessment activities and feedback on Moodle in synchronous and asynchronous learning was investigated in this study for a pre-degree English language course. The study found that there was presence of asynchronous engagement in all the forms of engagement. However, synchronous engagement was only present for learner engagement with the content, instructor, and other learners. The study also found that overall, asynchronous engagement was more prevalent than synchronous engagement.

KEYWORDS: asynchronous, blended mode, Moodle, synchronous

Introduction

The teaching and learning process has never been stationary. The innovations have come in the form of content, course materials, teaching and learning environment (physical), teaching methods, teaching pedagogies, educational theories and the teaching and learning resources. The transition in teaching modes has brought many changes in the way the classes are taught. The component of the teaching and learning process that had been and still is crucial is the engagement of the learner with all the other components identified above.

These engagements happen in two different styles: synchronous and asynchronous learning. Synchronous and asynchronous learning were quite popular areas of discussion in traditional face-to-face classes. With the change in the delivery modes, moving from traditional face-to-face classes to online classes, print based classes and a mixture of both, face-to-face online and print classes, the popularity of synchronous and asynchronous learning has increased. Research is also focussing on synchronous eLearning and asynchronous eLearning in a digital class.

Due to Covid-19, many countries in the Pacific saw a shift from traditional face-to-face class to online mode. Schools and universities were challenged to provide quality education through online platforms, an appropriate mode for that period (Fabrizz, Mendzheritskaya, and Stehle 2021). This change in teaching modes was quite swift and it was quite demanding for the instructors and the learners as it challenged their digital readiness (Bao 2020; Crawford et al. 2020; Fabrizz, Mendzheritskaya and Stehle 2021). While synchronous eLearning was classified as stressful, asynchronous eLearning allowed students to self-explore (Fernandez, Ramesh, and Manivannan 2022). However, instructors and learners could have effective courses and results if both synchronous eLearning and asynchronous eLearning are nicely blended and delivered (Amiti 2020).

The first learning style is synchronous learning. The learner communicates with all the different components with others at the same time in a 'real-time situation' (Fernandez, Ramesh, and Manivannan 2022) and the class has a structure (Malik et al. 2017). Engaging in synchronous learning ensures that the learner is concentrating in what is being taught, actively participates, and contributes to class, has better assessment and

course completion rates (Chen and You 2007; Hrastinski 2010; Malik et al. 2017) and gets immediate feedback (Lim 2017). A major limitation to synchronous engagement on Moodle is that any power failure (Fernandez, Ramesh and Manivannan 2022) or weak internet connectivity can hinder the quality of communication and promote complete absence of communication (Lim 2017). Poor internet connection can also result in ineffectiveness of learning processes (Mulyanti, Purnama and Pawinanta 2020; Putra, Witri, and Sari 2020; Mairing et al. 2021). Additionally, the classes and activities in synchronous learning are scheduled and these need to be adhered to in the limited time given for the course at any one occurrence (Hrastinski 2008).

The other form of learning is asynchronous learning. The learner interacts with the other components of the teaching learning process on their own time at their own pace (Amiti 2020). There is no set time for learning to be occurring (Malik et al. 2017). As a result, learners get more time to study and reflect on topics of discussion (Lim 2017). The limitation to asynchronous engagement is that feedback is not immediate, the probability of learners plagiarising is higher and student participation can be affected due to their remote location and flexible time of login into Moodle (Lim 2017; Hrastinski 2008). This can also lead to non-participation and failure to meet deadlines by students.

Background

The university is a regional university in the South Pacific and has students from its 12 member countries. There are also students enrolled at the university from other countries outside the region. The university offers pre-degree to post graduate courses via Face-to-Face mode, Blended mode, Print mode and Online mode. A lot of courses are taught via Blended mode at the Pre-degree level. However, proper guidelines were not given by the institute on Blended mode when courses were changed to Blended mode (Racule and Buadromo 2020).

With the shift to technology enhanced teaching and learning, the need for a Learning Management System arose. Moodle is the Learning Management System used to assist in facilitating the courses at the university 'to enhance students' achievement' (Al-Ani 2013). Satellite is used to connect

Moodle from the main campus to the other member countries (figure 1). It has become a crucial component of the teaching and learning process at the university. With the understanding that Blended mode is a mixture of Face-to-Face mode in a traditional classroom (Prohorets and Plekhanova 2015) and Online mode, lectures and tutorials are taken face-to-face, and Moodle is used to upload resources for students use.



Figure 1. USP connectivity: Moodle (*The University of the South Pacific, 2015*)

Learners engage on Moodle for many reasons. The engagement on Moodle is classified at the university as the Dimensions of Flexibility (USP Flexible Learning Policy 2017). It explains that engagement on Moodle is done under seven categories. These are learner to content engagement, learner to instructor engagement, learner to other learners' engagement, learner engagement with the learning environment, learner engagement with assessment activities, learner engagement with the feedback and learner engagement with the institution. The first six forms of engagement were studied for the purpose of this study.

Various studies have discussed engagements in synchronous eLearning and asynchronous eLearning by identifying and categorising each of the components under these two forms (Fabrizz, Mendzheritskaya, and Stehle 2021; Fabrizz, Mendzheritskaya, and Stehle 2022; Mairing et al. 2021; Amiti 2020; Anderson 2009; Lim 2017). However, there is no evidence of

any research looking at synchronous and asynchronous eLearning under each form of engagement (content, instructor, other learners, learning environment, assessment activities and feedback). Therefore, this research studies these two forms of eLearning for the various forms of engagement with the following assumptions.

It is assumed that pre-degree students are using Moodle for their study and as a result, are effectively engaging with the various sections (content, instructor, other learners, learning environment, assessment activities and feedback) on it. It is also assumed that due to its flexibility and long-term availability, learners engage asynchronously more than synchronously.

Therefore, the following research questions framed this study:

Q1 Learners can engage synchronously and asynchronously on Moodle with the course content, instructors, other learners, learning environment, assessment activities, and feedback.

Q2 Learners participate more in asynchronous engagement than synchronous engagement on the course Moodle page.

Method

For this research, data was collected using quantitative research method. This research investigated students enrolled in an English course at the university with data being collected during the semester of enrolment. Observation was made on learners' engagement on Moodle with the content, instructor, other learners, learning environment, assessment activities and feedback. Their clicks on each of these sections were extracted from Moodle and compared with each section.

Participants

80 students in a Pre-degree English course at a university were examined for the purpose of this study. These students were from the main campus of the university and were enrolled in Blended mode. From the 80 Blended mode students, 69 were between the age of 17 to 20 years, 10 were between the age of 21 – 30 years and only 1 student was above 30 years. All 80 students were classified as digital natives as they were born after 1980 (Prensky 2001). 57 of these students were females and 23 were males.

Study Program

The study was conducted on students who were enrolled in a Pre-degree English course at the university. This English course is a mandatory course for their program of study. As a result, all students enrolled in the Pre-degree program study this course.

Data

The students doing a pre-degree English course via Blended mode at the university were given consent forms to give approval to participate in the study. Those who filled in the consent form had their engagement closely monitored on the English course Moodle page.

Data was collected using quantitative method. Students' engagement on Moodle with the content, instructor, other learners, the learning environment, assessment activities and feedback were retrieved from the course page on Moodle for a semester. The number of clicks was extracted from Moodle and was classified as synchronous or asynchronous for the six forms of engagement.

Instruments

Under this quantitative research design, the learners' engagement on Moodle were observed and their engagement with sections like content, instructor, other learners, learning environment, assessment activities and feedback were recorded during the semester. The data was extracted from Moodle at the end of the semester.

Data Analysis

Collected data was first categorised according to the different forms of engagement (learner to content, learner to instructor, learner to other learners, learner with the learning environment, learner with assessment activities and learner with feedback). Then these were classified as either synchronous or asynchronous engagement for each of the six forms. Student engagements were presented using bar graphs.

Results

Learner to Content Engagement on Moodle

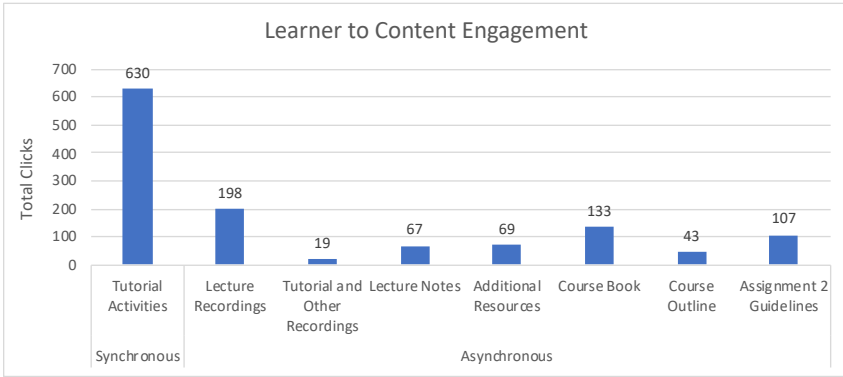


Figure 2. Synchronous and asynchronous learner to content engagement on Moodle

Figure 2 shows that tutorial activities were the only synchronous engagement in the content. Yet, it was the highest engagement (630 clicks) in learner engagement to content. In contrast, asynchronous engagement has a total of 636 clicks. The highest clicks were for lecture recordings (198) and lowest for tutorial and other activities (19). Engagement with course book and assignment 2 guidelines was also high: 133 clicks and 107 clicks respectively. Lecture notes (67 clicks) and additional resources (69 clicks) have moderate amount of engagement.

Learner to Instructor Engagement on Moodle

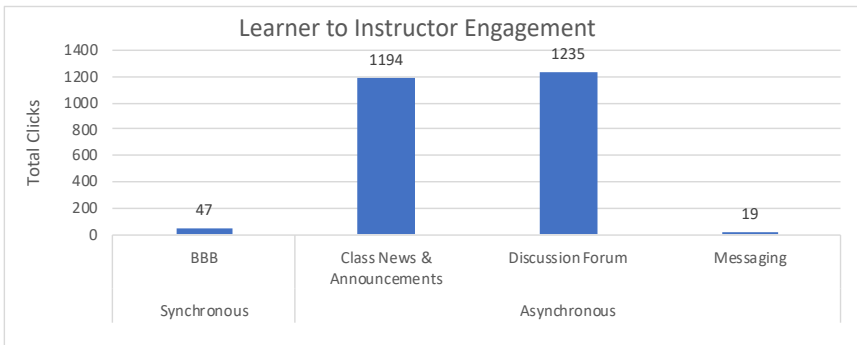


Figure 3. Synchronous and asynchronous learner to instructor engagement on Moodle

There were only 4 activities in learner to instructor engagement as depicted in Figure 3. BBB (47 clicks) was the only synchronous engagement. There were 3 asynchronous engagements which had a total of 2448 clicks. Messaging had the lowest number of clicks (19) for asynchronous engagement. However, class news and announcements (1194 clicks) and discussion forum (1235 clicks) were the two highest asynchronous engagements.

Learner to Learner Engagement on Moodle

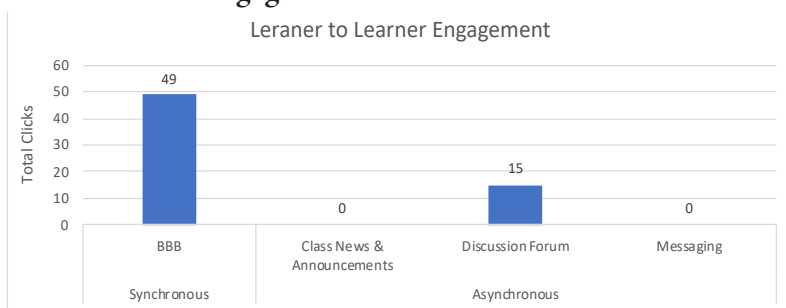


Figure 4. Synchronous and asynchronous learner to learner engagement on Moodle

Figure 4 shows the 4 activities in learner-to-learner engagement. The highest engagement (49 clicks) was synchronous (BBB). There were 3 components for asynchronous engagements. Of these the only asynchronous engagement that took place was between learners (15 clicks) via discussion forum. The other two asynchronous engagements (class news and announcements and messaging) had 0 clicks.

Learner Engagement with the Learning Environment on Moodle

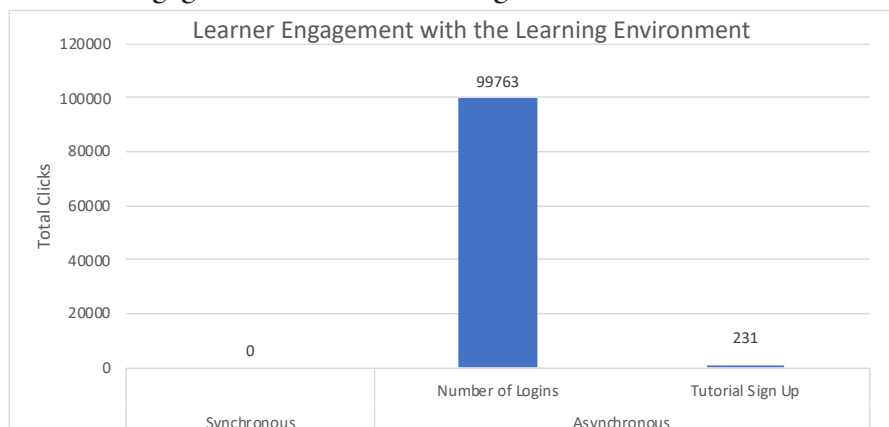


Figure 5. Synchronous and asynchronous learner engagement with the learning environment on Moodle

Learner engagement with the learning environment is depicted in figure 5. There was no synchronous engagement and only two asynchronous engagements. There was no component on the course Moodle page that could be classified as synchronous engagement in engagement with the learning environment. From the 2 asynchronous engagements, the number of logins (99763 clicks) had the highest click not only for the learning environment but for all forms of engagement by the learners. The other asynchronous engagement between the learner and the learning environment was tutorial sign up with 231 clicks.

Learner Engagement with the Assessment Activities on Moodle

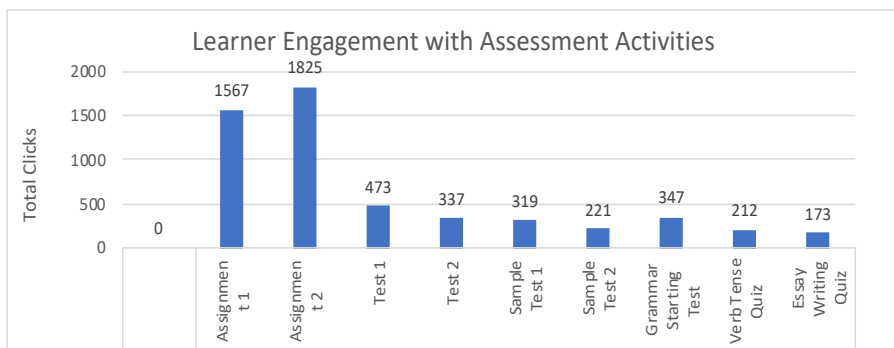


Figure 6. Synchronous and asynchronous learner engagement with the assessment activities on Moodle

Figure 6 shows learner engagement with assessment activities. There was no engagement component on the course Moodle page that could be classified as synchronous engagement for assessment activities. Nevertheless, there were nine forms of asynchronous engagements with a total of 5474 clicks. The most asynchronous engagement with the assessment activities was assignment 2 (1825 clicks) and the second highest engagement was for assignment 1 with 1567 clicks. Test 1 and test 2 had 473 clicks and 337 clicks, respectively. These were more than the clicks for the sample tests (sample test 1 319 clicks and sample test 2 with 221 clicks). The least asynchronous engagement was essay writing quiz (173 clicks).

Learner Engagement with the Feedback on Moodle

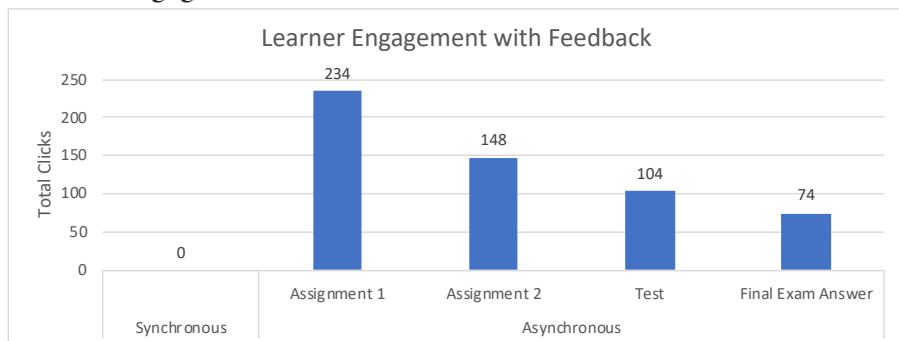


Figure 7. Synchronous and asynchronous learner engagement with the feedback on Moodle

Figure 7 shows learner engagement with feedback (560 clicks). Asynchronous learning had four types of engagement. The most clicked feedback was assignment 1 (234) and the second highest clicked feedback was assignment 2 (148). Test 1 feedback had a total of 104 clicks. The least clicked feedback was final exam answer (74). There was no synchronous engagement for feedback with the learner on the course Moodle page.

Synchronous Engagements on Moodle

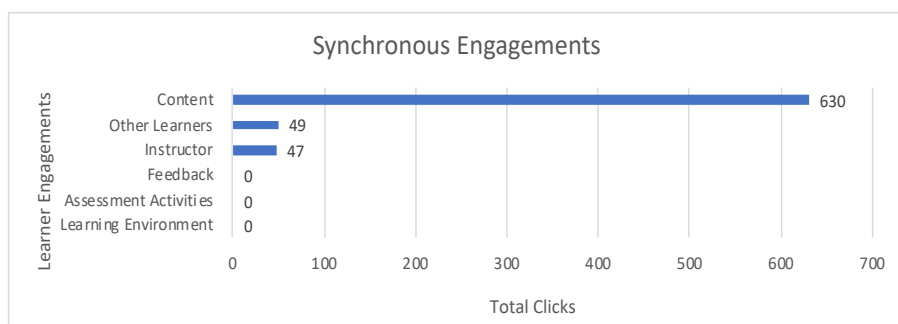


Figure 8. Synchronous engagements on Moodle

Figure 8 shows a summary of synchronous engagements from all forms of learner engagements on the course Moodle page. The most synchronous engagement as shown in figure 8 was between the learner and content (630 clicks). Learner engagement with the instructor (47 clicks) and other learners (49 clicks) are very close. Three engagements (learner with feedback, learner

with assessment activities and learner to learning environment) did not have any synchronous engagement. Therefore, they had 0 clicks.

Asynchronous Engagements on Moodle

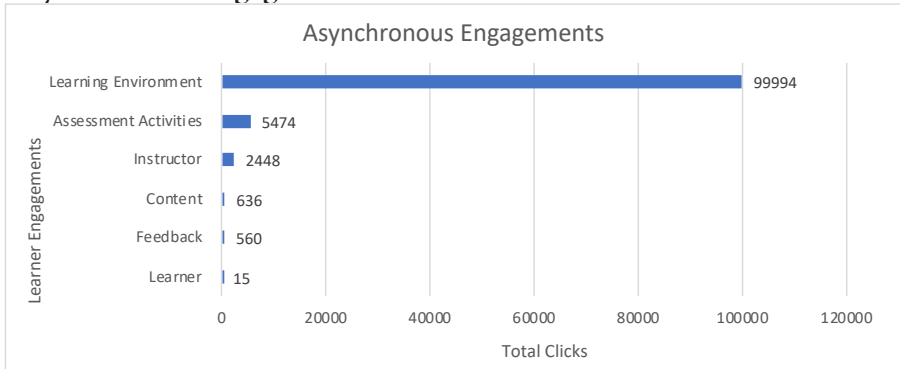


Figure 9. Asynchronous engagements on Moodle

Figure 9 shows that asynchronous engagement happened among the learner and other dimensions of studies (content, instructor, other learners, learning environment, assessment activities and feedback). The least asynchronous engagement was between learners (15 clicks). Asynchronous engagement between the learner and feedback was low with 560 clicks and the content was 636 clicks. Learner asynchronous engagement with the instructor (2448 clicks) and assessment activities (5474 clicks) was quite high. However, the most asynchronous engagement of the learner was with the learning environment (99994 clicks).

Synchronous Engagements vs Asynchronous Engagements on Moodle

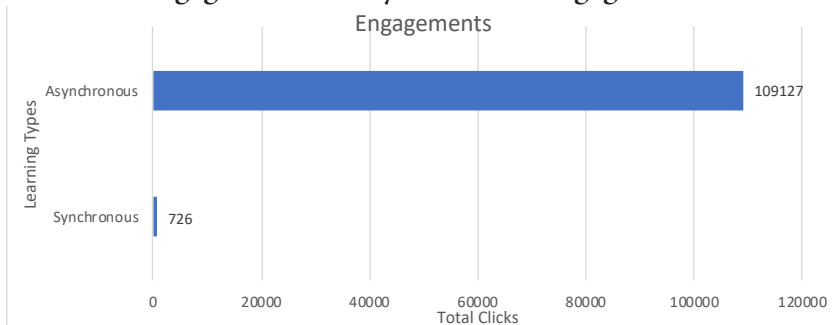


Figure 10. Synchronous and asynchronous engagements on Moodle

Figure 10 shows a summary of synchronous and asynchronous engagements. There is a vast difference (108401 clicks) in engagements between synchronous (726 clicks) and asynchronous (109127 clicks) learning. It is quite evident there was far more asynchronous engagements than synchronous engagements on the course Moodle page.

Discussion

This study aimed to comprehend learners' engagement synchronously and asynchronously on an English course Moodle page at a university. Based on data extracted from the Moodle page, analysis was done on all forms of engagement (content, instructor, other learners, learning environment, assessment activities and feedback) and the data was used to decide whether synchronous or asynchronous engagement was preferred by the students.

The first research question explores if learners engaged synchronously and asynchronously within the six forms of engagement on the course Moodle page. Results show that learners involved in the six forms of engagement on the course Moodle page, but synchronous engagement was present only for learner engagement with the content, instructor, and other learners.

While there were seven different forms of asynchronous engagement (lecture recordings, tutorial and other recordings, lecture notes, additional resources, course book, course outline and assignment 2 guidelines) in learner to content engagement, there was only one synchronous engagement (tutorial activities). However, the clicks for synchronous engagement were 630, which is very close to the seven asynchronous engagements combined (636 clicks). Similarly, there was only one form of synchronous engagement (BBB) for learner to instructor engagement, while there were three forms of asynchronous engagement (class news and announcements, discussion forum and messaging). There were far more clicks for asynchronous engagement combined (2448) than for synchronous engagement (47 clicks). In contrast, learner to learner engagement had only one synchronous engagement (BBB) and only one asynchronous engagement (Discussion Forum). Despite having only one form of engagement for both, synchronous and asynchronous, there were more clicks for synchronous engagement than asynchronous engagement. Quite contrary to the above three engagements (learner to content, learner

to instructor and learner to learner), the other three engagements (learning environment, assessment activities and feedback) had an absence of synchronous engagement.

Notably, learner engagement with the learning environment had two forms of asynchronous engagements (number of logins and tutorial sign up). This engagement (learner with learning environment) has the highest clicks in comparison to the other five engagements (learner to content, learner to instructor, learner to learner, learner with assessment activities and learner with feedback). The number of logins had 99763 clicks, which is the highest for any form of engagement.

Markedly, there were nine forms of asynchronous engagement (assignment 1, assignment 2, test 1, test 2, sample test 1, sample test 2, grammar starting test, verb tense quiz and essay writing quiz) in learner engagement with assessment activities with a total of 5474 clicks. In addition to this, learner engagement with feedback had four forms of asynchronous engagement (assignment 1, assignment 2, test and final exam answer). There were more clicks on feedback for the two assignments (assignment 1 and assignment 2) than for feedback on test and final exam answer.

Of the three engagements (learner to content, learner to instructor and learner to learner), learner engagement with the content had the highest clicks for synchronous learning (630) and the lowest clicks with the instructor (47). Contrarily, asynchronous engagement was present for all six forms of engagement with the highest click for learner to the learning environment (99994) and lowest (15 clicks) for learner-to-learner engagement.

The second research question investigates if participants engaged more asynchronously than synchronously on the course Moodle page. Since the course was offered on Blended mode and with the flexibility (Alonso, Manrique and Vines 2005; Hughes 2007; Estacio and Raga 2017; Amity 2020) that asynchronous engagements offer, it was believed that students would engage more asynchronously than synchronously.

It was found that in the English language course offered through Blended mode, the students interacted more in asynchronous learning (109127 clicks) than synchronous learning (726 clicks) in the various forms of engagement (figure 10). This shows that the Blended mode and asynchronous learning provides a strategy that motivates more learner-

centred approach and it provides flexibility for the learner to engage with the resources on Moodle (Estacio and Raga 2017; Alonso, Manrique and Vines 2005; Hughes 2007; Amiti 2020). This is the reason why there is more asynchronous engagements than synchronous engagements.

Three forms of engagement (learner to content, learner to instructor and learner to other learners) had both, synchronous and asynchronous learning. The other three types of engagement (learner with learning environment, learner with assessment activities and learner with feedback) had asynchronous engagement only. Despite been present in three forms of engagement, synchronous engagement, as shown in figure 2, figure 3 and figure 4, was minimum (learner to content, learner to instructor and learner to other learners).

Limitations

Few limitations were evident in this study. Firstly, the study investigated learner engagement with the dimensions of flexibility by recording the number of clicks. This does not reflect if the learner examined the contents of the component that was clicked. Therefore, the number of views would be a more realistic examination for learner engagement.

Moreover, students in the main campus were investigated. An enriching analysis can be reflected by studying the regional students with the main campus students studying via Blended mode.

Conclusion

This study concludes that at the university, the students engaged more in asynchronous than synchronous forms of engagement. This reflects the flexibility that Moodle provides for the learners to engage with the content, instructor, other learners, the learning environment, assessment activities and feedback.

Statements and Declarations

The authors certify that the information given is true and complete to the best of my knowledge. They understand that if they have deliberately given any false information or have withheld any information regarding any situation, they are liable for prosecution for fraud and/or perjury.

Notes on Contributors

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