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Correlational Study of Students' Moodle Log for Assessments and Feedback on Assessments on Moodle for a Mandatory Pre-Degree English Course

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ABSTRACT

This study explored the correlation between students' Moodle logs on assessments and feedback on assessments on LLFXX Moodle page. Nine forms of assessments and four forms of feedback on assessments on LLFXX Moodle page were studied. Four of these assessments are part of students' continuous assessments which add up to 50% of their Course work. Three of the feedbacks on assessments are for these continuous assessed assignments and tests. 80 Blended mode students from the Laucala campus of the university participated in this research. LLFXX, which is a mandatory pre-degree English course was used for the purpose of this research. A quantitative research method was employed to analyse data. Data was extracted on Moodle logs of LLFXX Blended mode Laucala students and were analyzed using two statistical tests. Pearson's chi-square test in SPSS was used to find the correlation between Moodle logs for assessments and feedback for assessments on LLFXX Moodle page. Pearson's correlational coefficient test from SPSS was used to find the degree of association between Moodle logs for each of the assessments and their feedbacks in LLFXX. There was no correlation (statistically insignificant) found between the Moodle logs for test 2 for LLFXX and Moodle logs for feedback on tests. However, there was a statistically significant correlation found between the Moodle logs of other assessments and their feedback for LLFXX.

INTRODUCTION

Many components play a crucial role in the teaching-learning process. One of these is assessments. Assessments are in form of end of session test, monthly tests, short tests, homework, mid-term exam, end of term exam, mid-year exam, annual exam, and continuous assessments like assignments, projects, reports, seminar presentations, oratory, and debate. The purpose of the assessments is to motivate students, give feedback to students and teachers, measure students' performance and progress in the course, assist in curriculum design, for diagnosis purposes and to support student's collaboration (Hooda *et al*, 2022). These assessments are crucial for all stakeholders (Hooda, *et al*, 2022; Dawson, *et al*., 2019; Faulconer, Griffith, & Gruss, 2021) of the teaching and learning process as it is a reflection of how much and how well a student has been able to recognize, comprehend and reproduce the information, in form of knowledge, that was learned. It is also a reflection for the teacher to assess his or her teaching skills and make improvements where needed. The parents and administrators of the school get an opportunity to recognise the students' abilities and capabilities and this assists in planning for their future from the very beginning. With the emphasis on assessments and their achievements in form of pass and fail or as a position or rank in class or as a grade was given priority, another crucial component of the teaching-learning process gained a lot of attention from the stakeholders. The feedback from assessments gained its importance gradually and today is as significant as any form of assessment. Feedback is an essential part of the learning process (The University of the South Pacific, 2022; Hooda, *et al*, 2022)). The quantity and quality of feedback on assessments have been under study for some time now and will be discussed in the later chapters. Instructors have been trained across the world to give adequate feedback in such a way that students recognise and learn from their mistakes in a positive and motivational manner without any damage being done to their morale. The feedback should not just give them the correct answers, as this does not lead to any form of constructive learning. The feedback should guide and encourage students to identify their errors and correct them using the guidelines from the teachers. Many tertiary institutes provide a marking guide with assessments. These guide students whilst doing their assessments, as it clearly outlines the expectations of the assessments and the marks allocated for each section. It also ensures that all markers adhere to one set of marking guide to ensure students are not penalized in any form if the marking is done by more than one marker.

It is always argued that the feedback on assessments is as crucial as the assessments themselves, and therefore, every teacher has to be very careful while giving feedback on students' assessments to ensure that constructive and critical learning takes place after students receive their marked assessments. This is possible if assessments are strategised, and reliable feedback are made and their impacts are analysed in higher education environment (Hooda *et al*, 2022).

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Background

The University of the South Pacific (USP) is a regional university and has students from its twelve member countries (Cook Islands, Fiji Islands, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu). The courses are taught in four modes: Face-to-face, Blended, Online and Print at each level (pre-degree to post-degree). Moodle is a mandatory component of the teaching and learning process for the four modes of delivery. Each of the courses at USP has continuous assessments (assignments, tests, mid semester tests, lab reports, projects, and seminar presentations) and the final exam. There are a few courses that only have continuous assessments and there is no final exam (100% coursework) component. As per section 2.2 (b) of the USP Assessment Procedures (2022) and section 1.2 (b) of the USP Assessment & Associated Regulations (2022), all continuous assessments are uploaded on Moodle for marking. Before any assessment is marked, its similarity percentage is checked with "Turn-it-in" software (The University of the South Pacific, 2022). If the similarity percentage is less than 20% (or in some cases, as determined by the Course Coordinator), only then it is marked. Any assignment caught to have been plagiarized is penalised according to the USP's Student Academic Integrity Regulations (The University of the South Pacific, 2023).

Since these continuous assessments are uploaded on Moodle, they create Moodle logs. A Moodle log is created every time a student views, edits, checks, deletes a file or comment, adds a comment or uploads an assignment. However, a Moodle log does not guarantee any interaction on Moodle. A student might have logged on to the course Moodle page and logged out without engaging or interacting on the course Moodle page.

For most of the continuous assessments, a marking rubric is made available for the students beforehand with the assignment questions usually at the beginning of the semester or when assessments are given; except for tests and mid semester tests. These marking rubrics are vetted by academics (Course Coordinators and their seniors) and the Instructional Designers (IDs) from the Centre for Flexible Learning (CFL). Such rubrics act as a guideline when students attempt their assessments because it inform them of the expectations of the markers and the marks that they could get if they follow the marking rubrics attentively. They are also a guideline for markers and ensure that marking is done as fairly as possible and at par. The feedback given to students on their assignments is also constructive and needs them to think critically and identify the areas which they could have performed better while ensuring that their morale towards their studies is not diminished.

According to USP's Assessment Procedures, section 2.2 (h): For all continuous assessment activities, detailed feedback must be published for each individual student submission within three weeks of the submission deadline. With reference to the assessment rubric, feedback should clearly outline the strengths and weaknesses of the specific assignment and indicate ways in which the student can improve their work in subsequent assignments (The University of the South Pacific, 2022).

Many at times, students do not realize the importance of feedback from assessments as they are not informed of the crucial role the feedback from the assessments play. Reference to the feedback reflect students' weak areas that need improvement. Once these weaknesses are overcome, students will be able to score better results. They are not errors pointed out but are guidelines for the future that could assist in better performance. Therefore, students need to refer to the feedbacks, whether they are verbal, written as hardcopies or available online on LMS like Moodle.

The Rationale of the Study

Despite what the literature explains on the significance of assessments and their feedback and what students perceptions are on these, there is no research done to examine students' actual usage (Moodle logs) for assignments and their respective feedback. This is pioneer research of such nature in the Pacific and thus would add substantial evidence to the research on assessments and their feedback, especially on Moodle.

Since assessments and the feedback on assessments play such a significant role in the teaching learning process, it was crucial to study them at tertiary level (USP) and explore if students realised its importance in a mandatory pre-degree English course (LLFXX).

Therefore, the two research questions that framed this study were:

Q1. There is a correlation between students Moodle log with assessments and feedback from assessments on the LLFXX Moodle page.

Q2. There is a correlation between each of the assessments and the feedback from each of these assessments on the LLFXX Moodle page.

LITERATURE REVIEW

While assessments are a mean to reflect how much a student has learnt, feedback for these assessments not only identify the errors that a student has made and shows the ranking or score that the student achieved with the quality of work submitted but it acts as a guideline to enable students to improve on their weaknesses. Learning is always referred to as a process and not as a product. Feedback on assessments are one of the components of this process that ensures that if these feedbacks are followed and improved upon, then learning takes place and thus, students progress with the process. However, students must use feedback to their full potential (Elsayed & Cakir, 2023).

Feedback can be given by instructors simultaneously in the class as lessons progress (usually verbal), or towards the end of the class collectively. Some feedbacks are errors being corrected by the instructors for the students whilst other feedbacks compel students to

contemplate upon the guidelines to correct the errors themselves (Allwright, 1975). This enables students to acquire the necessary knowledge and skills for future use. It shows that students are developing as scholars. Such learning is for a lifetime. Effective feedback are crucial as it allows learning to be self-regulated, increases students' motivation and academic performance, acts as a responsible factor towards course completion as it encourages student engagement, addresses accountability issues, and provides valuable information to instructors to improve feedback practices and assessment (Hooda, *et al*, 2022). These feedbacks should provide specific information related to the activities that enables real understanding of the content and abilities (Sadler, 1989; Cavalcanti, *et al*., 2021).

However, feedbacks are only effective if they are worked or improved upon and if they are given in a timely manner (Elsayed & Cakir, 2023). USP's Assessment Procedures, Section 2.2 (i) states that students should have 'received marks or feedback for their assignment within three weeks of the submission deadline' (The University of the South Pacific, 2022). Students may lose their interest in the given activity if the feedback is not given early or within a timeframe that enables it to be constructive with the given and future work and activities. When feedback is delayed, so is learning as acquiring of knowledge and skills is either paused or slowed due to the gap being created with the unlearnt information which is the missing knowledge and/or skill (Elsayed & Cakir, 2023). If feedback is delayed or late then it becomes a problem for few students as they cannot change their study habits (Nehring, Dacey, & Baghaei, 2017). Immediate feedback gives better result in improving students' outcomes (Butler & Winnie, 1995; Attali & Kleij, 2017; Cavalcanti, *et al*., 2021; Hooda, *et al*, 2022) and students had better academic improvement with a positive impact on their learning (Crimmins & Midkiff, 2017; Hooda, *et al*, 2022). Students like getting regular feedbacks even in form of quizzes as they find it to be valuable for their studies (Nehring, Dacey, & Baghaei, 2017). Students are motivated and accomplish better grades with good assessment (Nikou & Economides, 2016; Hooda, *et al*, 2022) and well defined feedback. Providing feedbacks on online platforms like Moodle also have the same benefits and challenges like a classroom or paper based assessment and feedback. Most importantly, the network needs to be stable, and instructors and students are able to use Moodle skillfully (Peiping, 2016). At times, feedback can be misinterpreted by students or students may face problems in interpreting it (Clack & Dommett, 2021; Coelho, *et al*, 2022; Kuo, Lin, Wang, & Nie, 2022; Elsayed & Cakir, 2023). An online environment also can facilitate automatic feedback. In online courses, feedback becomes critical as students and instructors are separated geographically and physically (Cavalcanti, *et al*., 2021). Automatic feedback increases students' performance in activities, it does not ease instructors' workload, and manual feedback is not more important than automatic feedback (Cavalcanti, *et al*., 2021). Since there is a lack of face-to-face interaction amongst students in an online course, feedback plays a crucial role (Ypsilandis, 2002; Cavalcanti, *et al*., 2021). Instructor needs to provide high-quality feedback to assist students (Nicole & Macfarlane-Dick, 2006; Cavalcanti, *et al*., 2021).

Moreover, higher education is employing peer assessments as a form of feedback, especially in bigger courses. The response of students is positive if they received support and training before engaging in online peer assessment, however, while designing these activities, it is significant to set assessments that are at par with students understanding of the concepts (Kumar, *et al*, 2020). Peers grades correlated highly with staff-assigned grades (Kulkarni, *et al*., 2013) and pre-service teachers could observe different performances consistently (Kurnaz, 2021). Research has also shown that while grades are valid and reliable amongst peer graders, there is a significant difference when compared with facilitator grade (Kumar, *et al*, 2020). Students' perception of feedback in higher education is also studied across the world. Useful feedback is those that they could use for self-assessment, and those that show their strengths, weaknesses and guide them towards what specifically they need to go back and study (Pokorny & Pickford, 2010). There are students who also have a negative response to the feedback that is provided and to improve their performance after the feedback, few students opted for independent learning (Robinson, Pope, & Holyoak, 2013).

The argument on assessments and feedback, their effectiveness and the perceptions of the instructors and students on these are areas that need to be further investigated. With the forever changing classroom environments (traditional or virtual), the area of investigation is vast and this has a lot of challenges when implementing any strategy to be practiced in the teaching-learning process.

METHODOLOGY

Quantitative research method facilitates numerical data and variables to be examined using software (Apuke, 2017; Bloomfield & Fisher, 2019; Queiros, Faria, & Almeida, 2017) and was therefore used for this study. Students' engagement with assessment and feedback from assessment (Moodle logs) on LLFXX (a compulsory pre-degree English course at USP) Moodle page was collected throughout the semester of their enrollment.

Study Program and Participants

USP offers LLFXX as a compulsory English course at the Foundation level for its pre-degree programs. It is offered through Blended and Print modes at Preliminary (Year 12 equivalent) and Foundation (Year 13 equivalent) levels. 80 Blended mode students were investigated for this study. They were based at Laucala Campus of USP (main campus) in the Fiji Islands.

Data

Information sheet about the research was circulated to all students who were enrolled in LLFXX via Blended mode at

the Laucala campus. However, only 80 students signed the consent form and gave their permission to participate in the study. Their confidentiality remained intact during and after the study. Students' Moodle logs on assessments and feedback on assessments were collected as the statistical data by extracting this from LLFXX Moodle page.

Instruments

Under this quantitative study, students' Moodle logs from their engagement with the assessments and feedback from assessments on the LLFXX Moodle page was extracted and analysed. Pearson's chi-square test and Pearson's correlational coefficient test were used to find the correlation between assessment Moodle logs and feedback from assessment Moodle logs (chi-square test) and the correlation between each assessment and the feedback from that assessment (correlation coefficient test).

Data Analysis

The two tests: Pearson's Chi-square and Pearson's Correlation Coefficient, on SPSS were used to analyse the quantitative data. Pearson's Chi-square test shows the correlation between two variables (students' Moodle log on LLFXX Moodle page for assessments and feedback on assessments). Whereas, Pearson's Correlation Coefficient test will show the degree of association between each assignment and its feedback.

Data was collected from students' Moodle logs on the LLFXX Moodle page. The Moodle logs on assessments and the Moodle logs on feedback from assessments were extracted from the LLFXX Moodle page, but their mean (μ) and standard deviation (σ) were calculated on excel. These Moodle logs were analysed using Pearson's chi-square test to find the correlation between these two engagements (assessment and feedback from assessments) and the Pearson's correlation coefficient is the test statistics that measures the statistical relationship, or association, between two quantitative variables for continuous assessments (total assessments with feedback on total assessments, assignment 1 with feedback on assignment 1, assignment 2 with feedback on assignment 2, test1 with feedback on test and test 2 with feedback on test) to see if there is a linear relationship. A linear relationship gives insight into how two variables interact with one another.

RESULTS

Students uploaded their assignments (1 and 2) on Moodle. These are assessed by the marker (Course Coordinator and Facilitator(s)) and uploaded on Moodle with the marks. There is also a comment section on Moodle which can be filled while uploading assessed assignments. Tests 1 and 2 were online on Moodle and feedback (marks and correct answers) are given once the Test closed. Each student is given 2 attempts for each test.

Students' Moodle logs with assessments and feedback from assessments were extracted from LLFXX Moodle page and their μ and σ were calculated on excel. These are shown in the next two line graphs.

Students' Moodle Logs on LLFXX Moodle Page

Figure 1 shows students' Moodle logs on LLFXX Moodle page. It has 4 continuous assessments (assignment 1, assignment 2, test 1 and test 2) and 5 self-assessments

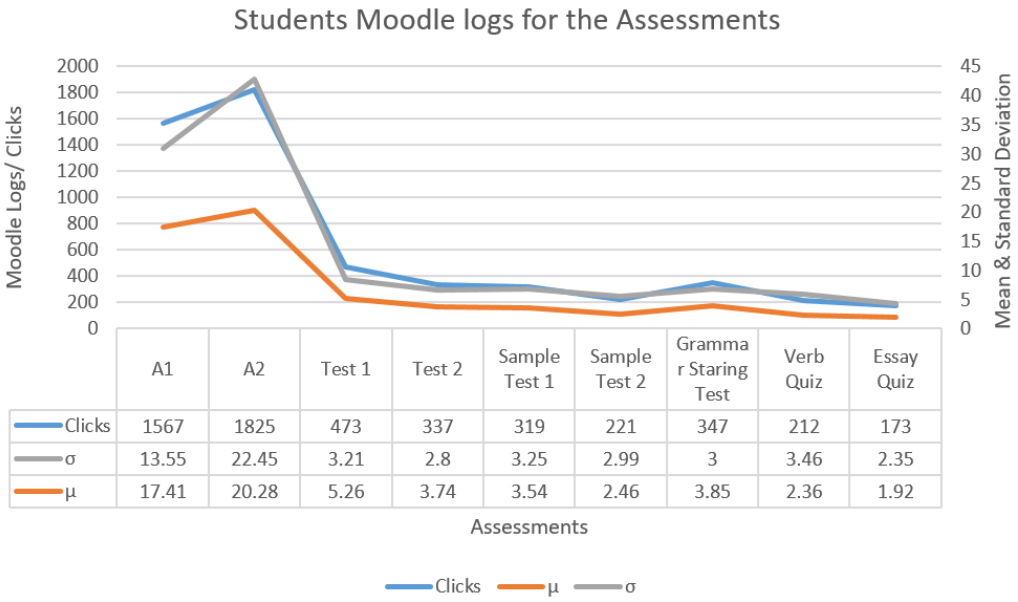

Figure 1: Students' Moodle logs for assessments on LLFXX Moodle page

(sample test1, sample test2, grammar starting test, verb quiz and essay quiz). The four continuous assessments add up to 50% of the students' final marks towards their grades at the end of the semester. The five self-assessments are used for revision purposes by students before assignments and tests are due.

From the four continuous assessments, the highest Moodle logs were recorded for assignment 2, which is the major assignment with a 20% contribution to continuous assessment, had a total of 1825 clicks. Its μ = 20.28

and σ = 22.45. assignment 1 (15% towards continuous assessment) had the second highest Moodle logs (1567 clicks). Its μ = 17.41 and σ = 13.55. There were more Moodle logs for test 1 than test 2. Test 1 had 473 clicks, and its μ = 5.26 and σ = 3.21. test 2, on the other hand, had a total of 337 clicks and its μ = 3.74 and σ = 2.8. Both tests are worth 7.5% respectively and added together, contribute 15% towards the continuous assessments. These four assessments contribute 50% towards the final marks at the end of the semester.

From the five self-assessments, students had the highest Moodle logs for grammar starting test, usually opened on Moodle at the beginning of the semester. There was a total of 347 clicks and the μ = 3.85 and σ = 3. Sample test 1 had a total of 337 Moodle logs, μ = 3.54 and σ = 3.25. 221 Moodle logs were recorded for sample test 2, μ = 2.46 and σ = 2.99. The verb quiz had 212 Moodle logs. Its μ = 2.36 and σ = 3.46. The least number of Moodle logs were recorded for essay quiz (173 clicks); its μ = 1.92 and σ = 2.35.

However, if all nine assessments Moodle logs are taken into consideration than it can be seen that there are more Moodle logs for grammar starting test than there are for test 2. The most to the least Moodle logs order would be assignment 2 (1825), assignment 1 (1567), test 1 (473), grammar starting test (347), test 2 (337), sample test 1 (319), sample test 2 (221), verb quiz (212) and essay quiz (173).

Figure 2 shows students Moodle logs for the feedback on the assessments. Three of the feedbacks are for continuous assessments. One is feedback from self-assessment. The highest Moodle log is for feedback for assignment 1. There are a total of 234 Moodle logs. The μ = 2.6 and σ = 2.55. Feedback on assignment 2 has the second highest Moodle logs (148). The μ = 1.64 and σ = 2.83. The feedback on both tests is recorded together as a total of 104 Moodle logs, μ = 1.16 and σ = 2.45. The feedback from the self-test, which was the final exam answer, had the lowest Moodle logs (74). The μ = 0.82 and σ = 1.36.

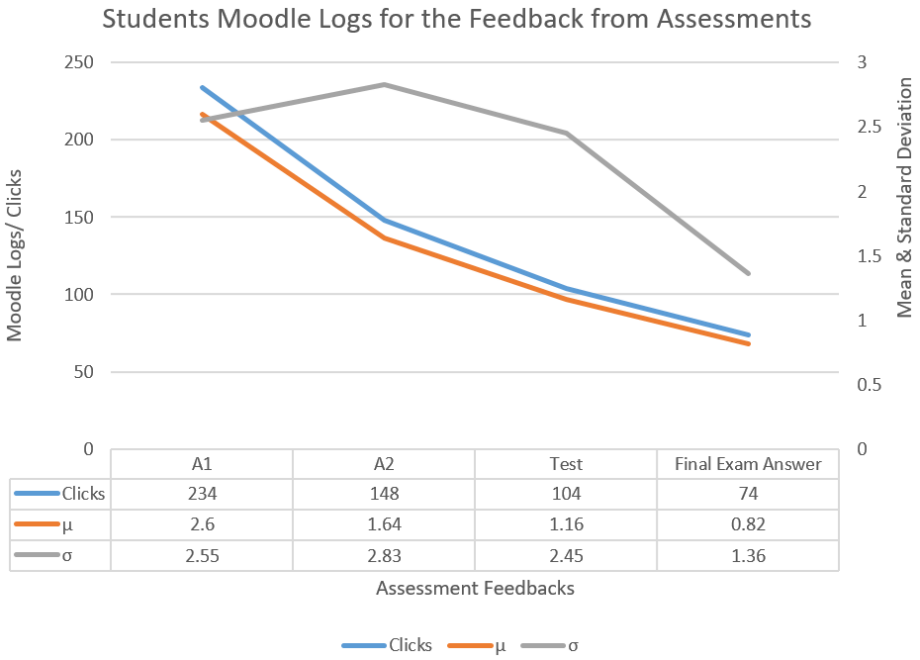

Figure 2: Students' Moodle logs for the feedback from assessments

Pearson's Chi-Square Test

The Pearson's chi square test on SPSS was used to analyse the data to calculate the correlation between students Moodle logs on assessments and their Moodle logs on feedback from assessments on LLFXX Moodle page.

The alpha value used for this research was 0.05. Before using SPSS to carry out the test, it was formulated that:

Ho: there is no correlation between students' Moodle logs on assessments and their Moodle logs on feedback from assessments.

H1: there is correlation between students' Moodle logs on assessments and their Moodle logs on feedback from assessments.

Using a two tailed test, the test variable (p) was calculated. If

p < alpha - result is statistically significant (correlation), meaning there is a correlation (alternative hypothesis) between two variables.

However, if

p > alpha - result is statistically insignificant (no correlation) and shows that there is no correlation (null hypothesis) between the two variables.

The result also shows the degree of freedom (df). This represents the number of values that are free to vary in the final calculation of statistics.

Chi-Square Test for Moodle Logs for Assessments and Feedback on Assessments on LLFXX Moodle Page

The p value for the test variable is,

p = 0.001 < 0.05

Hence, the result is statistically significant emphasising that there is a correlation between students Moodle log on assessments and students Moodle logs on feedback from assessments on the LLFXX Moodle page, thus, accepting the alternative hypothesis.

Table 1: Chi-square test result for Moodle logs for assessments and feedback on assessments for LLFXX

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1269.651a	1120	.001
Likelihood Ratio	367.639	1120	1.000
Linear-by-Linear Association	23.938	1	<.001
N of Valid Cases	80		

a. 1197 cells (100.0%) have expected count less than 5. The minimum expected count is .01.

Pearson's Correlation Coefficient

Pearson's correlation coefficient is utilised if there are two quantitative variables and the researcher wishes to see if there is a linear relationship between those variables. It looks at two things. Firstly, it shows Pearson's correlation which shows the association the two variables have with each other. If variable on Y axis increases, so should the variable on the X axis. This correlation is signified by the use of r.

The r in linear relationship shows the following:

If r is:

0.7 < 1 then the linear is a very high correlation,

0.5 < 0.7 then there is a high correlation,

0.3 < 0.5 then there is a medium correlation,

0.1 < 0.3 then there is a low correlation, and

0 < 0.1, then there is no apparent correlation.

Secondly, Pearson's correlation coefficient shows the p-value of the two tailed test. If the p-value is < 0.05, then there is evidence of a statistically significant bivariate association between the two continuous variables

Pearson's correlation coefficient in SPSS is used to analyse the correlation between the statistical data. Before using SPSS to carry out the test, it was formulated that:

Ho: there is no correlation between students' Moodle logs on assessments and their Moodle logs on feedback from assessments.

H1: there is correlation between students' Moodle logs on assessments and their Moodle logs on feedback from assessments.

Using a two tailed test, the test variable (p) was calculated.

If

p < alpha - result is statistically significant (correlation), meaning there is a correlation (alternative hypothesis) between two variables.

However, if

p > alpha - result is statistically insignificant (no correlation) and shows that there is no correlation (null hypothesis) between the two variables.

Total Moodle Logs for Assessments and Feedback on Assessments

Table 2: Total Moodle Logs for Assessments and Feedback on Assessments

Correlations			
		Assessment Total	**Feedback Total**
Assessment Total	Pearson Correlation	1	.503**
	Sig. (2-tailed)		<.001
	N	80	80
Feedback Total	Pearson Correlation	.503**	1
	Sig. (2-tailed)	<.001	
	N	80	80

***. Correlation is significant at the 0.01 level (2-tailed).*

Table 2 shows in the 2 tailed test that p = 0.001 < 0.05. Hence, there is a significant correlation (alternative hypothesis) between the total Moodle logs for assessments and feedback on assessments. The r value for the correlation is 0.503. Thus, showing a high positive correlation between the two variables.

Figure 3 is a scatter graph showing a high positive statistical linear graph (r = 0.503) for students' total Moodle log for assessments and total Moodle logs for feedback on assessments. Majority of students had a Moodle log of <100 on LLFXX Moodle page for assessments. This was even lesser (<10) for feedback. Only 1 student had a Moodle log of nearly 300 for assessments and nearly 30 for feedback. Another student had <100 Moodle log for assessments but a high (nearly 40) Moodle log for feedback.

Moodle Logs for Assignment 1 and Feedback on Assignment 1

Table 3 shows students Moodle log for assignment 1 and students Moodle log for feedback on assignment 1. The 2 tailed test shows that p = 0.001 < 0.05, hence, there is

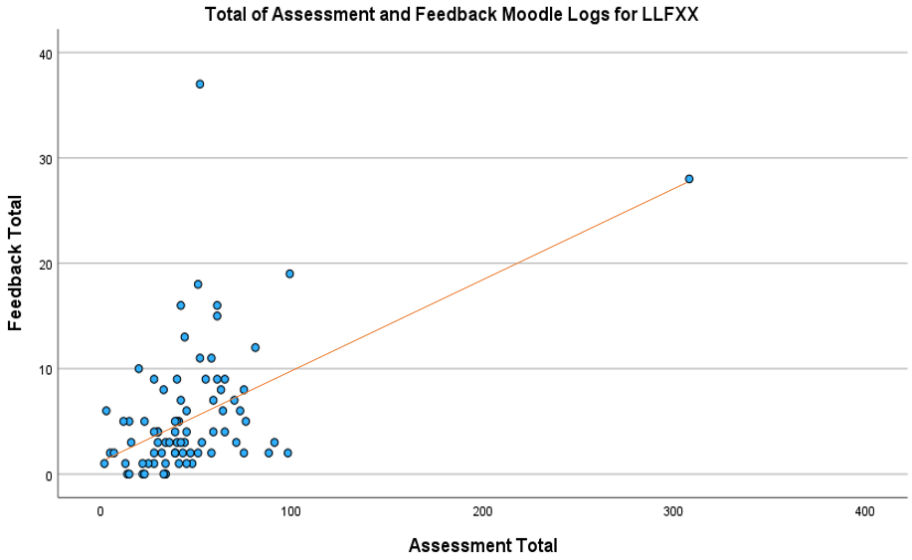

Figure 3: Total Assessment and Feedback on Assessments Moodle logs for LLFXX

a significant correlation (alternative hypothesis) between students Moodle log in assignment 1 and their feedback on assignment1. The r value is 0.396 showing a medium positive correlation between the two variables.

Figure 4 is a scatter graph showing a medium positive statistical linear graph (r = 0.396) for students' Moodle logs for assignment 1 and for feedback on assignment 1. Majority of students Moodle log is <60 for assignment 1 and < 10 for feedback on assignment 1. Only 1 student had a higher Moodle log (approximately 100) for assignment 1 and its feedback (>10). There was a student with a <20 Moodle log for assignment 1 but a high Moodle log for feedback (>10).

Table 3: Moodle Logs for Assignment 1 and Feedback for Assignment 1

Correlations			
		Assignment 1	**Feedback A1**
Assignment 1	Pearson Correlation	1	.396**
	Sig. (2-tailed)		<.001
	N	80	80
Feedback A1	Pearson Correlation	.396**	1
	Sig. (2-tailed)	<.001	
	N	80	80

***. Correlation is significant at the 0.01 level (2-tailed).*

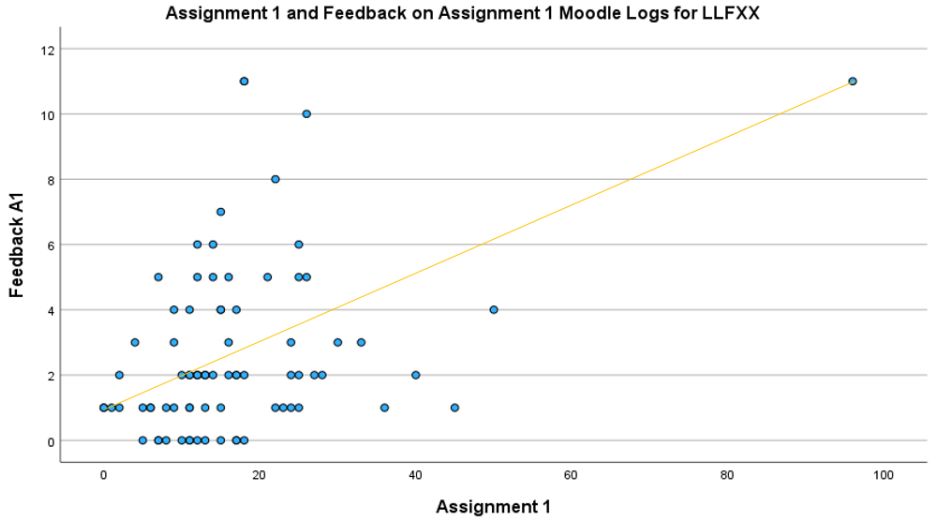

Figure 4: Moodle logs for Assignment 1 and Feedback for Assignment 1 on LLFXX Moodle page

Moodle Logs for Assignment 2 and Feedback on Assignment 2

Students' Moodle log for assignment 2 and students' Moodle log for feedback on assignment 2 are shown in Table 4. The 2 tailed test shows that p = 0.001 < 0.05, hence, there is a significant correlation (alternative hypothesis) between students Moodle log in assignment 2 and their feedback on assignment 2. The r value is 0.512, thus, showing a high positive correlation between the two variables.

Figure 5 is a scatter graph showing a high positive correlation in a statistical linear graph (r = 0.512) for students' Moodle logs for assignment 2 and for feedback on assignment 2. Only 1 student had nearly 200 Moodle logs for assignment 2 and >10 but <15 Moodle logs for feedback on assignment 2. Another student had a Moodle log of 20 for feedback on assignment 2 and a Moodle log of >20 but <50 for assignment 2. Remaining students had assignment 2 Moodle logs of <100 and feedback Moodle logs of <10. Majority of students had <50 Moodle logs for assignment 2 and <5 for feedback on assignment 2.

Table 4: Moodle logs for Assignment 2 and Feedback on Assignment 2

Correlations			
		Assignment 2	**Feedback A2**
Assignment 2	Pearson Correlation	1	.512**
	Sig. (2-tailed)		<.001
	N	80	80
Feedback A2	Pearson Correlation	.512**	1
	Sig. (2-tailed)	<.001	
	N	80	80

***. Correlation is significant at the 0.01 level (2-tailed).*

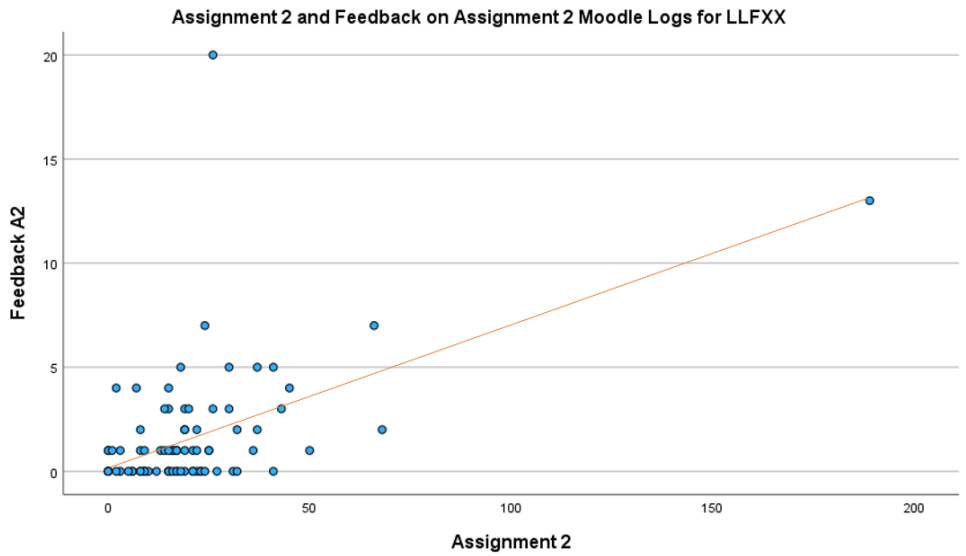

Figure 5: Moodle Logs for Assignment 2 and Feedback on Assignment 2 on LLFXX Moodle page

Moodle Logs for Test 1 and Feedback on Test

Students' Moodle log for test 1 and their Moodle log for feedback on test are shown in Table 5. The 2 tailed test shows that p = 0.003 < 0.05, hence, there is a significant correlation (alternative hypothesis) between students Moodle log in test 1 and their feedback on test 1. The r value is 0.327, showing a medium positive correlation.

The scatter graph in Figure 6 is showing a statistical linear graph showing a medium correlation (0.327) for students' Moodle logs for test 1 and for feedback on test. Majority of students had <10 Moodle logs for Test 1 and <7 for feedback on Test. 2 students had a Moodle log of >12 for Test 1 but <5 for feedback on test. There were 2 students who had a higher Moodle log for feedback for Test (>10)

Table 5: Moodle Logs for Test 1 and Feedback on Test

Correlations			
		Feedback Test	**Test 1**
Feedback Test	Pearson Correlation	1	.327**
	Sig. (2-tailed)		.003
	N	80	80

Test 1	Pearson Correlation	.327**	1
	Sig. (2-tailed)	.003	
	N	80	80

***. Correlation is significant at the 0.01 level (2-tailed).*

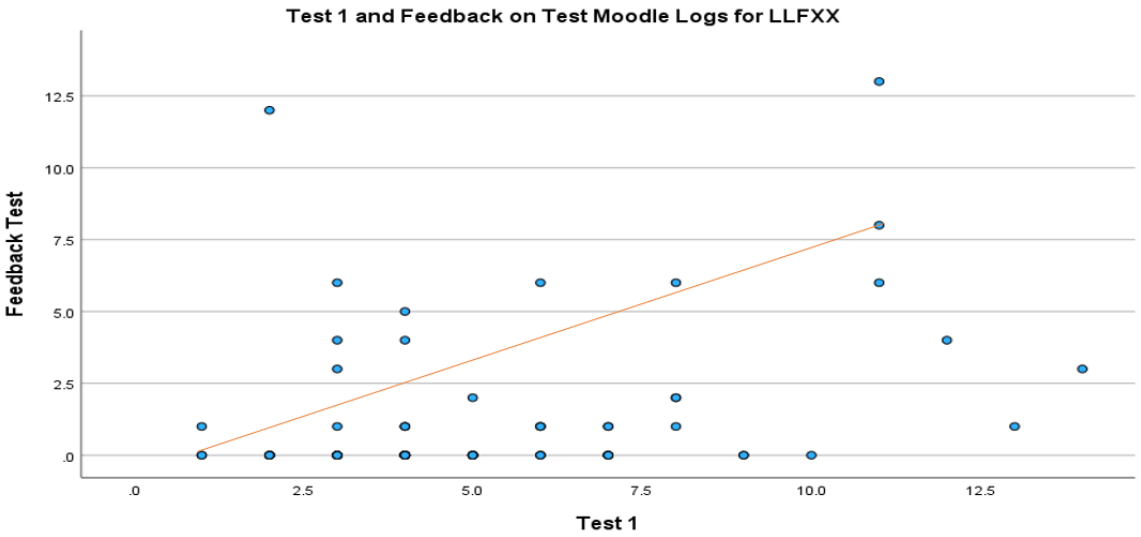

Figure 6: Moodle Logs for Test 1 and Feedback on Test

than logs for the Test. One of these student had a Moodle log of >12 for the feedback for test but <12 for test 1. The other student had >10 Moodle log for feedback on Test but <2.5 for Test 1.

Moodle Logs for Test 2 and Feedback on Test 2

Table 6 shows students' Moodle log for test 2 and their Moodle log for feedback on test. The 2 tailed test shows that p = 0.738 > 0.05, hence, there is an insignificant

Table 6: Moodle Logs for Test 2 and Feedback on Test

Correlations			
		Test 2	**Feedback Test**
Test 2	Pearson Correlation	1	.038
	Sig. (2-tailed)		.738
	N	80	80
Feedback Test	Pearson Correlation	.038	1
	Sig. (2-tailed)	.738	
	N	80	80

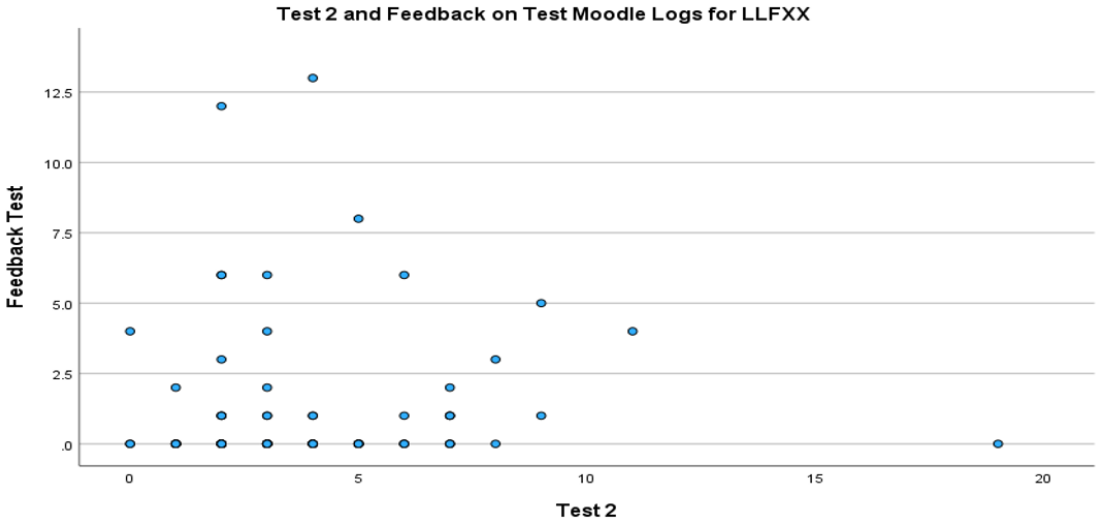

Figure 7: Moodle Logs for Test 2 and Feedback on Test for LLFXX

correlation (null hypothesis) or no apparent correlation between students Moodle log in test 2 and their feedback on test. The r value is 0.038.

The scatter graph in Figure 7 is showing a non-statistical graph emphasising a no correlation (r = 0.038) between students' Moodle logs for test 1 and for feedback on test. Many students did not have any Moodle log for the feedback for Test 2 (0). One student had a Moodle log of >15 but <20 for Test 2 but 0 Moodle log for feedback on Test. There were 2 students who had >10 Moodle logs for feedback for Test but <5 Moodle logs for Test 2.

DISCUSSION

This study investigated two research questions. Firstly, it examined if there was a correlation between students Moodle log with assessments and feedback from assessments on the LLFXX Moodle page. There was a total of 5474 Moodle logs for assessments in Figure 1 and 560 Moodle logs in Figure 2 for feedback from assessments. It was found through Pearson's chi-square test that there was a correlation between students' Moodle logs on assessments and feedback from assessments as p = 0.001 < 0.05 (Table 1).

From the nine forms of assessments (Figure 1), 4 were components of continuous assessments (assignment 1, assignment 2, test 1 and test 2) which adds up to 50% towards their final marks (result). The remaining 5 (sample test 1, sample test 2, grammar starting test, verb quiz and essay quiz) were for self-assessment activities and for revision purposes. Figure 2 shows that the three feedbacks are for continuous assessments (assignment 1, assignment 2 and test) and the fourth feedback is a final exam answer from a previous semester. All the data are very reliable as they are clustered towards the mean as shown in Figure 1 and Figure 2.

Secondly, it explored if there was a correlation between each of the assessments and the feedback from each of these assessments on the LLFXX Moodle page. Assignment 1 is a research and note-taking assignment. While marking the assignment, the marker (Course Coordinator or Facilitator(s)) write comments on the assignments. The scores are entered in a marking rubric which is very descriptive against the marks. Assignment 2 is writing an argument essay. In this assignment, the marker (Course Coordinator or Facilitator(s)) writes constructive comments, may even correct the errors and check for essay writing structure whilst giving feedback. The score for this assignment is also entered into a very descriptive marking rubric. The marked assignments are entered on Moodle with the scores and a comment. The two tests are attempted online (each student is given two attempts) and scores are automatically updated on Moodle. Students access their scores and correct responses after the Tests close on Moodle.

Each of the continuous assessments (assignment 1, assignment 2, test 1 and test 2) were tested against with their feedback (feedback from assignment 1, feedback from assignment 2 and feedback from test) using Pearson's correlation coefficient test to check how closely associated each of these variables are with the other. It was found that apart from Test 2, all other continuous assessments (assignment 1, assignment 2, and Test 1) had a positive correlation, with their feedback; medium correlation for Assignment 1 and Feedback from Assignment 1 (Figure 4) and Test 1 and Feedback from Test (Figure 6) and high correlation for Assignment 2 and Feedback from Assignment 2 (Figure 5).

The total assessments and total feedback on assessments has a p value of 0.001, which is < 0.05. This is a significant correlation (alternative hypothesis) and has a r value of 0.503 and shows a high positive correlation coefficient between the total Moodle logs for all assessments and total Moodle logs for all feedback from assessments (Table 2 and Figure 3). A high positive correlation between students' total assessments and feedback on total assessments shows that students are referring to the feedback on assessments and thus realise its significance in their studies.

The two assignments, 1 (Table 3 and Figure 4) and 2 (Table 4 and Figure 5), and their feedbacks also show a positive correlation. The p value for both correlations between the assignments and their feedbacks were 0.001. The r value for assignment 1 and its feedback was 0.396 (medium) and for assignment 2 and its feedback were 0.512 (high). Although the correlation between the two assignments (1 and 2) differs (Assignment 1 is medium and Assignment 2 is high), they are positive. The r value for assignment 2 is stronger (0.512) than assignment 1 (0.396). Assignment 1 is research and note-taking, which is the first three stages of essay writing, or a preliminary requirement for assignment 2, where students actually write the essay. The Moodle logs for feedback on assignment 1 was low and it shows that students check their score, marking rubric and comments and may not need to study the feedback in detail due to the nature of the assignment. However, assignment 2, which is a major assignment (20%), is writing an argumentative essay. The content, argument, structure, style, language, and reference are all graded and commented upon. There would be comments in the essay on all these components, the marks on the marking rubric and the total score out of 20%. Due to the high percentage this continuous assessment weighs and the nature of the assessment, there were more Moodle logs and thus a higher r value (0.512) showing a high correlation in comparison with assignment 1 and Test 1 (medium correlation).

Similarly, Table 5 and Figure 6 show a medium positive correlation (p = 0.003 and r = 0.327) between test 1 and feedback from test. In contrary, Table 6 and Figure 7 showed no correlation (p = 0.738 and r = 0.038) between test 2 and feedback from test. Test 1 is the first continuous assessment that students attempt (week 4 of the semester). Therefore, the urge to check marks and correct response for the questions is obvious and genuine. However, this enthusiasm decreases (no correlation) for Test 2 because by then students are occupied with assessments from

other courses and preparing for the final examination.

Overall, the correlation coefficients show that there are correlations with the assessments and its feedback except for test 2. But these correlations are weakly positive and their association with each other (assessment and feedback of assessment) are statistically significant (alternative hypothesis). Students attempt assessments and may visit it many times to ensure that its correctly added, and has a low similarity percentage. They may need to delete and resubmit assessments (assignments) if need be. As a result, the Moodle logs are high for assessments. However, learners may need to check their feedback once and twice. There is no need to keep visiting the feedback and, therefore, the Moodle logs are low.

Most importantly, each of these assessments and their feedbacks, except for test 2, have a statistically significant result ($p < 0.05$). This shows that the variables have positive correlation and the association with the variables are quite healthy (medium to high) with each other. Moodle logs from Assignment 2 and its feedback from assignment 2 ($r= 0.512$) and Moodle logs for total assessments and the feedbacks of total assessments ($r = 0.503$) have a little stronger correlation than the others.

The only continuous assessment that does not show any correlation is Moodle logs for test 2 and the Moodle logs for feedback from the test. Its p value is $0.738 > 0.05$ and r value is 0.038 which is very close to zero. Both values do not show any correlation or association with each other. This is due to the fact that test 2 is conducted in Week 12. This is towards the end of the semester and students are overloaded with assessments from all units as they are struggling to complete their course work (continuous assessments) and prepare for the final examination, which is after 3 weeks. So students do not have the time and energy to visit the feedbacks at that point in time over and over again, especially because it is a test. They may just check their mark in the test. Their priority at this pace of the semester is to complete course work and thus their association with test 2 and its feedback has no correlation at all.

CONCLUSIONS

This paper studied the correlation (Pearson's chi-square test) between students' Moodle logs for the assessments and feedbacks on assessments. The correlation between each assessment and its feedback, in form of the degree of association with each other, was further investigated with Pearson's Correlation Coefficient test. It was found that there was a statistically significant correlation (alternative hypothesis) between student's Moodle logs on assessments and the Moodle logs on the feedback of the assessments. Also, there is a positive correlation between the total Moodle logs for each assessments and the total Moodle logs for their feedbacks (high correlation), Moodle logs for assignment 1 and Moodle logs for feedback on assignment 1 (medium correlation), total Moodle logs for assignment 2 and Moodle logs for feedback on assignment 2 (high correlation), and Moodle logs for test 1 and the Moodle logs for feedback on test (medium correlation). However, no statistically significant correlation (null hypothesis) was found between Moodle logs for test 2 and the feedback from the test.

This study shows that the students do realise the crucial role feedbacks on assessments play and they were referred to after assessments were marked and used as guidelines while submitting future assessments. Such findings emphasise that every aspect or component of the teaching and learning process is crucial towards students learning, performance in assessments and achieving good results in their courses. A limitation to this study was that only Laucala based Blended mode students were studied for the purpose of this research. There would have been a wider and more rich data available if all students enrolled in LLFXX across the region were examined.

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