

A STUDY OF THE BARRIERS TO THE IMPLEMENTATION OF BLENDED LEARNING

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ABSTRACT There has been fast growing of blended courses (hybrid or mixed-mode courses) where a portion of the traditional face to face instruction is replaced by online learning. Blended courses have claimed as one of the famous choices for students in overseas colleges and universities due to its much advantage of flexibility and convenient compare with face to face classroom experience. However, adopting a new teaching approach is always a daunting and challenge task in an early adopted stage with limited resource circumstances. This paper aims to identify the barriers to the implementation of blended learning. Data is collected using questionnaire survey method. Finding shown that most students were aware of the Blackboard (BB) learning platform.

Keywords: Blended Learning, Hybrid Instruction, Early Adoption, Education Change

1. INTRODUCTION

The implementation of blended learning which is the combination of traditional face to face classroom experience and online learning experience is not new teaching approach in colleges and universities around the world. In fact, blended learning is claimed as a new traditional model or new normal in colleges and universities course delivery [1, 2, 3]. The background of this blended learning is explained in details as in the study of [4]. The main reason for them using the hybrid method were to increase student involvement, engagement and interactivity in their larger-sized classes. They claimed that in larger-sized classes, more students were attending the class but yet less prepared and less willing to participate. Most of the students just sit and passively absorb the information. When questions were asked, few students willing to volunteer themselves to respond and test performance was below average for a number of students [4]. Thus, they introduced the blended learning in their such circumstances. It has been found that this approach can rise understanding, interaction and involvement in the learning process.

The advantages of blended learning sparks our interest to undertake the problem of blended learning as our focus to fill in the gap of blended learning. This paper aims to identify barriers to the implementation of blended learning in one of the higher education. The next section is the methodology, followed by finding and discussion in section 3. Results are drawn in the last section.

2. RESEARCH METHODOLOGY

Survey method is the sampling of individual from a population and the association survey data collection techniques in improving the number and accuracy of responses to surveys. The survey method was adopted in this present study. Survey method is selected due to respondents' willingness to participate, flexibility of asking questions and coverage of the target populations. Thus, a questionnaire survey form consists of ten close-ended questions was developed. These survey forms were delivered to selected groups of students from Building Structures (EGK2107), Mathematics 1 (MAT1210), Mathematics 2 (MAT1211) and Statistics (STA1202). These subjects have been selected to implement blended learning. Building Structures is a module in QS programme. Mathematics 1 (MAT1210), Mathematics 2

(MAT1211) and Statistics (STA1202) are modules in Foundation programme. All respondents are full-time students (age 18-20 years old).

3. FINDING AND DISCUSSION

From Table 1 and Figure 1 – Descriptive Statistics (Summary of Survey-blended learning) :

- (1) Building Structures (EGK2107) was analysed and shown that most students were aware of the 'Blackboard (BB)' learning platform (83.3%) but only 33.3% of the students accessed the materials in BB before the semester begins. Only 41.7% of the students viewed the 'Video lecture' before the 'face-to-face lecture'.
- (2) Mathematics 2 was analysed and shown that most students were aware of the 'Blackboard (BB)' learning platform (100%) but only 50.0% of the students accessed the materials in BB before the semester begins. Only 66.7% of the students viewed the 'Video lecture' before the 'face-to-face lecture'.
- (3) Mathematics 1 (MAT1210) was analysed and shown that most students were aware of the 'Blackboard (BB)' learning platform (97.3%) but only 36.5% of the students accessed the materials in BB before the semester begins. Only 73% of the students viewed the 'Video lecture' before the 'face-to-face lecture'.
- (4) The Statistic was analysed and shown that most students were aware of the 'Blackboard (BB)' learning platform (100%) but only 50.0% of the students accessed the materials in BB before the semester begins. Only 75% of the students viewed the 'Video lecture' before the 'face-to-face lecture'.
- (5) From the data, it can be interpreted that this result might be still in the early stage to set up the blended learning, hence, few students access the materials in BB. However, students are aware of this platform due to emphasis on BB by all staffs and lecturers.

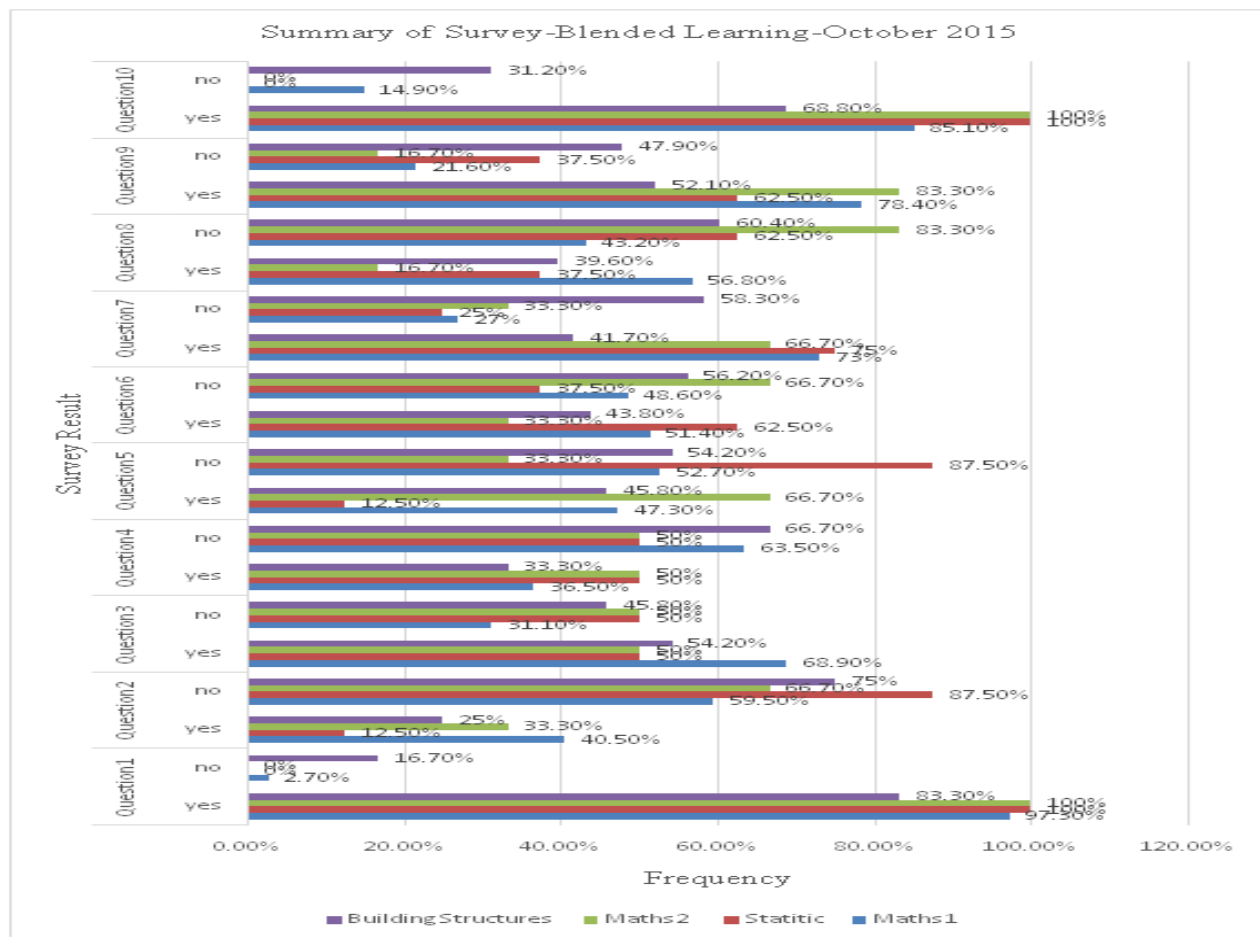


Figure 1. Graphic Display of data collected on Blended Learning

Table 1. Summary of Data Collected on Blended Learning

Survey Question No	Class/Module			
	Maths 1 (8S1; 8S2) [Total: 74]	STAT1202 (8T1) [Total: 8]	Maths 2 (MAT1211) (8T1) [Total: 6]	EGK2107 – Building Structures [Total: 48]
1	Yes: 72 No: 2 [97.3%]	Yes: 8 No: 0 [100.0%]	Yes: 6 No: 0 [100.0%]	Yes: 40 No: 8 [83.3%]
2	Yes : 30 No: 44 [40.5%]	Yes: 1 No: 7 [12.5%]	Yes: 2 No: 4 [33.3%]	Yes: 12 No: 36 [25.0%]
3	Yes: 51 No: 23 [68.9%]	Yes: 4 No: 4 [50.0%]	Yes: 3 No: 3 [50.0%]	Yes: 26 No: 22 [54.2%]
4	Yes: 27 No: 47 [36.5%]	Yes: 4 No: 4 [50.0%]	Yes: 3 No: 3 [50.0%]	Yes: 16 No: 32 [33.3%]

5	Yes: 35 No: 39 [47.3%]	Yes: 1 No: 7 [12.5%]	Yes: 4 No: 2 [66.7%]	Yes: 22 No: 26 [45.8%]
6	Yes: 38 No: 36 [51.4%]	Yes: 5 No: 3 [62.5%]	Yes: 2 No: 4 [33.3%]	Yes: 21 No: 27 [43.8%]
7	Yes: 54 No: 20 [73.0%]	Yes: 6 No: 2 [75.0%]	Yes: 4 No: 2 [66.7%]	Yes: 20 No: 28 [41.7%]
8	Yes: 42 No: 32 [56.8%]	Yes: 3 No: 5 [37.5%]	Yes: 1 No: 5 [16.7%]	Yes: 19 No: 29 [39.6%]
9	Yes: 58 No: 16 [78.4%]	Yes: 5 No: 3 [62.5%]	Yes: 5 No: 1 [83.3%]	Yes: 25 No: 23 [52.1%]
10	Yes: 63 No: 11 [85.1%]	Yes: 8 No: 0 [100.0%]	Yes: 6 No: 0 [100.0%]	Yes: 33 No: 15 [68.8%]

Table 2 – summarises the output from the t-test for the difference between 2 proportions (EGK-2107 – Building Structures and MAT1210 – Mathematics 1).

- (1) Most MAT1210 and EGK2107 students did not think BB learning platform can replace the traditional (face—to-face) teaching in a normal classroom.(eg only 25% of EGK2107 students think BB can replace face-to-face teaching).
- (2) Most MAT1210 and EGK2107 students did not access the BB learning platform before the semester begin. (eg. Only 33.30% of EGK2107 students access the BB learning platform before the semester begin.)
- (3) Most MAT1210 and EGK2107 students did not study the ‘ppt slides on Overview’ in BB before the first lecture in each semester.(eg. Only 45.80% of EGK2107 students did study the ‘ppt slides on Overview’ in BB before the first lecture in each lecture.)
- (4) Most MAT1210 and EGK2107 students did not study the teaching material on ppt slides in the BB learning platform before each ‘face-to-face’ lecture in class.(eg. Only 43.80% of EGK2107 students studied the teaching materials in the BB learning platform before each ‘face-to-face’ lecture in class.)
- (5) Most MAT1210 students did view the relevant videos on recorded lectures before each face-to-face lecture (73%) but very few EGK2107 students viewed the relevant videos (41.70%)
- (6) Most MAT1210 and EGK2107 students did not practice the problems in the tutorial in the BB learning platform before each tutorial class.(eg only 39.60% for EGK2107 students).

Table 2. Output from t –test for the difference between 2 proportions (MAT1210 vs EGK2107)

MAT1210 vs EGK 2107 (t – Test for difference between 2 proportions)		
Null Hypothesis: $p_1 = p_2$		
Alternative Hypothesis: $p_1 \neq p_2$		
Comments (tested at $\alpha = 0.05$)		
Q1	-	(Not able to test) Not significant at $\alpha = 0.05$. Most students (EGK2107 & MAT1210) do know that INTI has introduced the BB learning platform for all students. (83.30% for EGK2107 and 97.3% for MAT1210)
Q2	P-Value: 0.0776	Not significant at $\alpha = 0.05$. There is no significant difference between the students' perceptions from MAT1210 and EGK2107. Most MAT1210 and EGK2107 students did not think BB learning platform can replace the traditional (face-to-face) teaching in normal classroom.(eg only 25% of EGK2107 students think BB can replace face-to-face teaching.)
Q3	P-Value: 0.0990	Not significant at $\alpha = 0.05$. Most MAT1210 and EGK2107 students do know that INTI has started the teaching using 'Blended Learning' for selected subjects since January 2015 (eg 68.90% for MAT1210).
Q4	P-Value: 0.7217	Not significant at $\alpha = 0.05$. Most MAT1210 and EGK2107 students did not access the BB learning platform before the semester begin. (eg. Only 33.30% of EGK2107 students access the BB learning platform before the semester begin.)
Q5	P-Value: 0.8742	Not significant at $\alpha = 0.05$. Most MAT1210 and EGK2107 students did not study the 'ppt slides on Overview' in BB before the first lecture in each semester.(eg. Only 45.80% of EGK2107 students did study the 'ppt slides on Overview' in BB before the first lecture in each lecture.)
Q6	P-Value: 0.4118	Not significant at $\alpha = 0.05$. Most MAT1210 and EGK2107 students did not study the teaching material on ppt slides in the BB learning platform before each 'face-to-face' lecture in class.(eg. Only 43.80% of EGK2107 students studied the teaching materials in the BB learning platform before each 'face-to-face' lecture in class.)
Q7	P-Value: 0.0005	Significant at $\alpha = 0.05$. There is significant difference between the students' perceptions between MAT1210 and EGK2107. Most MAT1210 students did view the relevant videos on recorded lectures before each face-to-face lecture (73%)but very few EGK2107 students viewed the relevant videos (41.70%)
Q8	P-Value: 0.0638	Not significant at $\alpha = 0.05$. Most MAT1210 and EGK2107 students did not practice the problems in tutorial in the BB learning platform before each tutorial class.(eg only 39.60% for EGK2107 students).
Q9	P-Value: 0.0023	Significant at $\alpha = 0.05$. There is significant difference between the students' perceptions between MAT1210 and EGK2107. 52.10% of EGK2107 students and 78.40% of MAT1210 students knew how to source for other relevant reading materials from the internet for self-directed learning of the subject.
Q10	P-Value: 0.0309	Significant at $\alpha = 0.05$. There is significant difference between the students' perceptions between MAT1210 and EGK2107. 68.80% of EGK2107 students and 85.10% of MAT1210 students did source for relevant reading materials from the internet to complete their written assignment.

4. CONCLUSION

In conclusion, most students were aware of the Blackboard (BB) learning platform. However, less than 50% of the students access the material in BB before the semester begins. Most of the students who are taking MAT1210 (Mathematics 1) put effort to view the relevant videos on recorded lectures before each face-to-face lecture (73%) but for EGK2107 (Building Structures), very few students viewed the relevant videos (41.70%). Reasons might be students who are taking MAT1210 mostly just graduate from SPM and have the habit to read it before coming to the class. Few students of MAT1210 and EGK2107

practised tutorial in the BB learning platform before each tutorial class. Reasons might be too many tutorials for them and they don't have sufficient time to practice most of the tutorial questions.

We suggest more in-depth studies are needed in the following areas to investigate: (1) Why did most students not accept the innovative teaching method? (2) Why did most students not access Blackboard learning platform?

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