

Analyzing Student Attendance and Academic Achievement from Student Experience in Higher Education Blended Program

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Abstract— E-learning has been widely applied in higher education institutions to provide opportunities for students to learn anytime from anywhere. Blended program as a form of e-learning program design is developed to facilitate a mixture of offline and online courses. Given the nature of blended program design, researchers can gain the opportunity to study e-learning implication in the context of comparing offline and online classes. Such study is beneficial to contribute to literature that still needs evidence towards the implication of e-learning, in particular, the comparison between offline and online learning. This research makes an attempt to study student attendance and their academic achievement in a blended program. Assessing student experience in a blended program enables researchers to explore student attendance in online and offline classes. In addition, this study also gains the opportunity to relate student attendance into their academic achievement in order to analyze the implication of e-learning into academic result. Research data is gathered from a blended program in M.H.Thamrin University Jakarta that offers offline and online classes in three different study programs. Research findings show there are differences in student attendances and their academic achievement across offline and online classes. These findings indicate the advantages and disadvantages of e-learning application in higher education.

Keywords: *e-learning, student attendance, academic achievement, higher education, blended program*

I. INTRODUCTION

In spite of numerous suggestions to advice e-learning for solving distance and time constraints faced by students in higher education, there is a lack of evidence in the literature to study the implications of online courses into student attendance. Shah and Barkas (2018) suggested that the application of e-learning technology such as Blackboard reduces the communication gap between students and tutors without time and location constraints. However, their paper tends to focus on student engagement into the Learning Management System, while less emphasis to analyze the student attendance. Student attendance has been recognized to have an impact on student achievement (for example Al-Shammari, 2016 and Geltner and Clark, 2005). Student attendance issues are mostly related to improving student achievement. Unfortunately, those researches were conducted in the context of conventional face to face classes, yet they did not make an attempt to study e-learning courses.

E-learning development issues are related to student achievement (for example Uka, 2014; Mihanovic et al, 2016). Uka (2014) argued that student satisfaction reflects quality in higher education institutions because educational institutions setting their service to educate students that is consumed by students during the learning process. Students will consider being satisfied if they feel the education services meet their needs and expectations. Mihanovic et al (2016) suggested higher education institutions maintain students' satisfaction to be competitive in the market of higher education. Their research indicates a strong relationship between the expectations of students and the satisfaction towards the service that the universities are able to provide. Tossy (2017) argued that the impacts of e-learning on student's achievements are difficult to measure and debatable. He suggested higher education institutions to measure e-learning impact on student's achievements and as it provides input for policy makers to improve the institutions' quality.

The objective of this study is to analyze student attendance and student achievement in the blended program that offers both online and offline courses. Studying blended programs provides an opportunity to compare student attendance and student achievement in an online class and face-to-face classes.

II. RESEARCH METHODOLOGY

This study employs a descriptive research method that involves gathering data before organizing and describing data for analysis purpose. In particular, the research method is designed to collect data regarding student attendance and their academic achievement in order to find evidence about the implication of e-learning in the blended program. Data is collected from academic administration reports in Learning Management System that compile students' attendance and student academic scores. The academic reports are prepared for the classes at the end of the semester in each class in the blended Programs in online and offline classes. The blended study programs in M.H. Thamrin University Jakarta are conducted in undergraduate level include Management, Accounting and Technology Information.

Respondents of this research are students enrolled in the blended programs who completed their classes in each

course. There are 481 students in offline classes and 408 students in online classes. There are 14 offline classes and 12 online classes in the three study programs. Student attendance and student academic scores in offline and online classes are indexed and presented in tables in the data analysis section.

III. DATA ANALYSIS

Research data is presented in tables to show student attendance and academic achievement in offline and online classes. Data is expected to provide indications to identify how students' behavior in offline and online classes. Table 1 presents the average student attendance data from all offline classes. There are 14 offline classes consist of 481 students. Average student attendances range from 21% to 75%. The highest average student attendance is 75% in Mathematics for Eco & Business Class A. The lowest average student attendances are 21% in Programming Class B. Overall, the average student attendance in offline classes is 42%.

Table 1. Student attendance in offline classes

Course (Offline Classes)	# Students	Attendance (%)
Basic of Mathematics Class A	31	44%
Basic of Mathematics Class B	32	40%
English Class A	42	57%
English Class B	31	56%
Introduction to Accounting Class A	42	68%
Introduction to Accounting Class B	31	59%
Mathematics for Eco & Business Class A	42	75%
Mathematics for Eco & Business Class B	31	31%
Programming Class A	31	10%
Programming Class B	32	21%
Religion Class A	42	38%
Religion Class B	31	34%
Religion Class C	31	31%
Religion Class D	32	28%
Total or average	481	42%

Table 2 presents average student attendance data from all online classes. There are 12 online classes consist of 408 students. Average student attendances range from 55% to 75%. The highest average student attendance is 71% in Indonesian Language Class A. The lowest average student attendance is 55% in Intro to Information Tech Class B. Overall, the average student attendance in offline classes is 62%.

Table 2. Student attendance in online classes

Course (Online Classes)	# Students	Attendance (%)
Algorithm in Programming Class A	31	64%
Algorithm in Programming Class B	32	59%
English Class A TI	31	59%
English Class B TI	32	55%
Indonesian Language Class A	42	71%
Indonesian Language Class B	31	62%
Intro to Information Tech Class A	31	61%
Intro to Information Tech Class B	32	57%
Micro Economics Class A	42	70%
Micro Economics Class B	31	62%
Principles of Business Class A	42	68%
Principles of Business Class B	31	58%
Total or average	408	62%

Table 3 presents the average student academic achievement data from all offline classes. The student academic data is measured using the final score that each student ultimately achieved in each class. Average student academic achievements range from 31 to 61. The highest average student attendance is 61 in English Class A. The lowest average student academic achievements are 31 in Basic of Mathematics Class B and Religion Class D. Overall, the average student attendance in offline classes is 49.

Table 3. Academic achievement in offline classes

Course (Offline Classes)	# Students	Score
Basic of Mathematics Class A	31	34
Basic of Mathematics Class B	32	31
English Class A	42	61
English Class B	31	59
Introduction to Accounting Class A	42	59
Introduction to Accounting Class B	31	52
Mathematics for Eco & Business Class A	42	55
Mathematics for Eco & Business Class B	31	52
Programming Class A	31	55
Programming Class B	32	40
Religion Class A	42	51
Religion Class B	31	49
Religion Class C	31	51
Religion Class D	32	31
Total or Average	481	49

Table 4 presents the average student academic achievement data from all offline classes. The student academic data is measured using the final score that each student ultimately achieved in each class. Average student academic achievements range from 28 to 55. The highest average student attendance is 55 in Indonesian Language Class A. The lowest average student academic achievements are 28 in Introduction to Information Tech Class B. Overall, the average student attendance in offline classes is 42.

Table 4. Student attendance in online classes

Course (Online Classes)	# Students	Score
Algorithm in Programming Class A	31	41
Algorithm in Programming Class B	32	29
English Class A TI	31	42
English Class B TI	32	31
Indonesian Language Class A	42	55
Indonesian Language Class B	31	45
Intro to Information Tech Class A	31	36
Intro to Information Tech Class B	32	28
Micro Economics Class A	42	49
Micro Economics Class B	31	45
Principles of Business Class A	42	50
Principles of Business Class B	31	50
Total or Average	408	42

Table 5 presents average student academic achievement data in all offline classes. The average failed students in offline classes range from 29% to 69%. The highest failed student is 69% in Religion Class D. The lowest average student academic achievements are 29% in English Class A. Overall, the average failed student rate in offline classes is 46%.

Table 5. Student academic achievement in offline classes

Course (Offline Classes)	Failed (#Students)	Failed (%)	Passed (#Students)	Passed (%)	Total (#Students)
Basic of Mathematics Class A	17	55%	14	45%	31
Basic of Mathematics Class B	20	63%	12	38%	32
English Class A	12	29%	30	71%	42
English Class B	12	39%	19	61%	31
Introduction to Accounting Class A	14	33%	28	67%	42
Introduction to Accounting Class B	14	45%	17	55%	31
Mathematics for Eco & Business Class	14	33%	28	67%	42
Mathematics for Eco & Business Class	14	45%	17	55%	31
Programming Class A	15	48%	16	52%	31
Programming Class B	18	56%	14	44%	32
Religion Class A	15	36%	27	64%	42
Religion Class B	15	48%	16	52%	31
Religion Class C	15	48%	16	52%	31
Religion Class D	22	69%	10	31%	32
Average	217	46%	264	54%	481

Average passed student in offline classes range from 31% to 71%. The highest failed student is 71% in English Class A. The lowest average student academic achievement is 31% in Religion Class D. Overall, the average failed student rate in offline classes is 54%.

Table 6 presents average student academic achievement data in all online classes. The average failed students in online classes range from 38% to 72%. The highest failed students are 72% in Algorithm in Programming Class B and Introduction to Information Tech Class B. The lowest average failed students are 38% in Indonesian Language Class A and Principles of Business Class A. Overall, the average failed student rate in offline classes is 53%.

Table 6. Student academic achievement in online classes

Course (Online Classes)	Failed (#Students)	Failed (%)	Passed (#Students)	Passed (%)	Total (#Students)
Algorithm in Programming Class A	18	58%	13	42%	31
Algorithm in Programming Class B	23	72%	9	28%	32
English Class A TI	15	48%	16	52%	31
English Class B TI	19	59%	13	41%	32
Indonesian Language Class A	16	38%	26	62%	42
Indonesian Language Class B	17	55%	14	45%	31
Intro to Information Tech Class A	20	65%	11	35%	31
Intro to Information Tech Class B	23	72%	9	28%	32
Micro Economics Class A	18	43%	24	57%	42
Micro Economics Class B	14	45%	17	55%	31
Principles of Business Class A	16	38%	26	62%	42
Principles of Business Class B	14	45%	17	55%	31
Total or Average	213	53%	195	47%	408

Average passed student in online classes range from 28% to 62%. The highest failed students are 62% in Indonesian Language Class A and Principles of Business Class A. The lowest average student academic achievement is 28% in Intro to Information Tech Class B. Overall, the average failed student rate in offline classes is 47%.

IV. DISCUSSION

There are 14 classes in offline mode with 481 students compare to 12 classes with 408 students in online mode. The proportion of the number of classes between offline and online represents Indonesian regulation requirement for higher education blended program. The online classes are determined by education regulation to be less than half of the overall courses in any blended program. The blended program is fulfilled government regulation.

The average student attendances in offline classes range from 21% to 75%, where the overall average student attendance in offline classes is 62%. The average student attendances in online classes range from 55% to 71%, where the overall average student attendance is 62%. The data shows that average student attendance in offline classes is lower than average student attendance in online classes. It indicates that online classes provide the opportunity for students to come and learning into virtual classes. The online classes have an advantage for enabling students to access the Learning Management System from anywhere and overcome distance, traffic and time constraints. However, there are some student attendances in offline classes higher that student attendance in all online classes. It indicates that face-to-face interaction between students and lecturers is able to stimulate better attendance rate in offline classes than online classes.

The average student academic achievement in offline classes range from 31 to 61, the overall average student attendance in offline classes in 49. The student academic data is measured using the final score that each student ultimately achieved in each class. The average student academic achievement data in online classes range from 28 to 55, where the overall average student attendance in offline classes is 42. The data shows that average student attendance in offline classes is higher than average student attendance in online classes. It indicates that offline classes provide an opportunity for lecturers and students to have direct face-to-face relation that generates source of motivation. The offline classes have an advantage for enabling students to have a direct interaction between students and lecturers.

The average student academic achievement in offline classes range from 29 to 69%, the overall average student attendance in offline classes in 49. The student academic data is measured using the final score that each student ultimately achieved in each class. The average student academic achievement data in online classes range from 28 to 55, where the overall average student attendance in offline classes is 42. The data shows that average student attendance in offline classes is higher than average student attendance in online classes. It indicates that students in offline classes have absorbed more learning material that they can apply in exams. It also indicates that offline classes provide an opportunity for lecturers and students to have direct face-to-face relation that generates a source of motivation. The offline classes have an advantage for enabling students to have a direct interaction between students and lecturers.

The average failed student in offline classes range from 29% to 69%, where the overall average failed student rate in offline classes in 46%. The average passed student in offline classes range from 31% to 71%, the overall average failed student rate in offline classes in 54%. The average failed student in online classes range from 38% to 72%, where the overall, the average failed student rate in offline classes in 53%. The average passed student in online classes range from 28% to 62%, the overall average failed student rate in offline classes in 47%. The data shows that the average failed students in offline classes are higher than average failed students in online classes. It indicates that offline classes provide an opportunity for

lecturers and students to direct face-to-face meeting that prevents students from failing or improve the chance for students to pass the course.

V. CONCLUSION

Study on blended programs provides insights towards student attendance and their academic achievement in face-to-face and virtual classes. Blended program in higher education is required to have a number of online courses less than half of the overall curriculum. Research analysis shows that student attendance that average student attendance in offline classes is lower than average student attendance in online classes. Online classes are accessible for students to learn anywhere and anytime that overcome time constraints and traffic. The online learning method is considered advantageous than offline learning that increases students' participation in learning. However, offline learning also provides benefit for lecturers to take advantage of face-to-face learning mode with students to stimulate their motivation to come into the classes. This advantage is indicated by the higher attendance rate in some offline classes compared to offline classes.

Research data analysis indicates a challenge and opportunity to develop e-learning in higher education institutions. Student performed better in offline classes than their performance in online classes. The score range and average students' scores are relatively higher in offline classes than online classes. The data shows that average student attendance in offline classes is higher than average student attendance in online classes. It indicates that offline classes provide an opportunity for lecturers and students to have direct face-to-face relation that generates source of motivation. The offline classes have an advantage for

enabling students to have a direct interaction between students and lecturers. As a result, there are more students successfully passed the offline courses compared to students passed the online classes. It indicates that offline classes provide an opportunity for lecturers and students to direct face-to-face meeting that prevents students from failing or improve the chance for students to pass the course.

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