

Student's Core Course Performance and Learning Behaviors Through Online Learning and Teaching (PdPdt) in The Pandemic of Covid-19

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Abstract

The study measures the effectiveness of online learning and teaching-based education (PdPdT) towards students' performance on the sole core course sat by third-semester students of Diploma in Banking and Finance, Politeknik METrO Betong Sarawak (PMBS) namely DPF30033: Financial Market Operation. The teaching method for this course was fully carried out using online learning platforms such as Microsoft Teams and Google Meets. PdPdT was approved and deemed a feasible initiative by the Ministry of Higher Education of Malaysia replacing the traditional face-to-face classroom as a means of curbing the spread of the Covid-19. Distinct from the previous practice, PdPdT was a transition phase to PMBS students and assumed a new norm to course instructors to the extent that PdPdT is expected to be impacting students' comprehension, knowledge and outcome in learning the course. A total of 30 students successfully attended both continuous and final assessments for the course consisting of test, quiz, video presentation, project as well as the alternative (final) assessment. The data from students' achievement in these assessments were compared and evaluated to indicate the effectiveness of PdPdT and how it influences students' learning behaviors. The study found that a majority of students managed to meet the target set by the course instructor that eventually defines PdPdT has been a panacea possessing positive impacts on students' progress in their studies and reliable enough to substitute traditional face-to-face classroom for its benefits to course instructors and students in higher institutions particularly to PMBS.

Keywords: - online learning, core course, effectiveness, learning behaviors, Covid-19

1. Introduction

Before the outburst of Covid-19 in late 2019, higher institutions of learning in Malaysia majorly focus on the adoption of its learning and teaching session through a traditional face-to-face classroom. The face-to-face lesson tends to be the most common option for conducting lectures, classes, discussions or other academic purposes in various educational institutions from the bottom of primary and secondary school, college, higher learning institution up to the university level in the country. This method is where the interaction actively happens between the instructor and students. Face-to-face classes can be regularly continued to meet at least twice a week utilizing a lecture or discussion format. Due to the outbreak of Covid-19, many higher institutions including Politeknik METrO Betong Sarawak are now taking initiatives towards changing their learning and teaching methods into a virtual mode with the assistance of a multitude of available online learning platforms. Online learning platforms, in a cursory glance, are assumed as reliable methods replacing face-to-face classroom to curb the spread of the pandemic Covid-19.

2. Literature Review

2.1 Covid-19 Outbreak and The Emanating Impacts

The global spread of the corona virus known as Covid-19 literally pounces numerous challenges to the higher education landscape at a magnitude we have not seen since the emergence of technology-supported and online instruction. Because universities (or we can say any other higher learning institutions too) act as conveners of large groups of people, universities have to establish precautionary approaches to lessen the impact of Covid-19 on higher education and beyond. (Liguori and Winkler, 2020). The Covid-19 pandemic outbreak has literally dictated many schools and colleges to remain closed temporarily to the notion that certain areas are getting impacted globally, deepened by the fear of losing this whole ongoing semester or even more in the coming future. This is proven where many schools, colleges, and universities have discontinued in-person teaching.

2.2 Teaching and Learning Effectiveness

With the presence of online learning, students are given so-called autonomy to choose the means of communication that fits them best - storybook, PowerPoint, drawing, web pages, podcasts, etc.

giving students various learning and communication styles, therefore, keep engaging them more in their learning. (Pape, 2010). The main concentration is directed on how online learning able to incline students' passion towards their studies and increase their academic achievement. Based on the study by Bastick cited by Barman et al. (2015), effective teaching closely relates to maximizing student academic attainment and teacher and student course satisfaction. Effective teaching can be measured by using the Three-Ability Framework (3AF) consisting of technical skills, professional competence, and professional attitude. On the other hand, Bulger et al. (2002) suggested that teacher effectiveness gives excellent guidance for doing the job of teaching well. In fact, the use of The Four Aces of Effective Teaching (outcomes, clarity, engagement, and enthusiasm) may be useful in bringing order out of potential chaos. These four aces when it is systematically implemented, it can enhance student learning and be used as a vehicle for continual self-examination to improve instructional effectiveness. Students' behavioural engagement in the online-based learning influences curricular and instructional changes on student academic performance and achievements. (Guthrie et al., 2002)

2.3 Performance Comparison on Online and Classroom Learning

The past research by Thomas et al. (2005) was carried out purposely to compare students' outcomes of classroom-based and online-based course of construction safety. The team discovered that students' performance across four examinations on online-based course with specific reference to application-type examination items were higher than the performance of students on the classroom-based course. Another research by Chen et al. (2007) on the effectiveness and student perceptions in an MBA Accounting Course in blended-learning and traditional classroom environments found that traditional classrooms were to offer benefits that cannot be acquired in any other manner. Nonetheless, as the technology becomes friendlier for both instructors and students, gaps in process effectiveness will continue to be narrowed. Li et al. (2014) mentioned such differences emanating from engagement in the traditional classroom-based and online-based courses tend to lead to different learning outcome.

2.4 Advantages of Online Learning

Brenda (2017) pointed the advantages of online learning to the extent that verbal and non-verbal cues can be enriched where it is necessarily important to bind teacher-student communication,

particularly in language learning. This includes gestures, body language, and other audible cues that enhance the communication in the classroom and point to understanding or the lack thereof and are thus a contributing factor in determining class pace. McPherson et al. (2015) mentioned that online courses take heed some formats. The one offered asynchronously allows students to individually determine when they interact with the online material. This means that even with fully online asynchronous courses, it can vary the amount of students' interaction towards the course's computer technology. Student learning outcomes for online learners regardless of background characteristics were as good as or better than traditional learners. Students were greatly satisfied with online learning (Navarro and Shoemaker, 2000).

2.5 Instructors' Teaching Behaviours

The communication initiated by the instructor, too, plays a crucial element towards enhancing the teaching and learning environment despite using online learning platforms (Najafi and Rahmanzadeh, 2013). To transmit the speaker's intention to the audience properly, it is highly recommendable that the speaker using a clear, concise, polite, correct, and rich expression in oral communication with the audience. As cited by Sutiayatno (2018) from Ballester (2015), the way teachers communicate with students has become so important in determining the effectiveness of teaching. It leaves impacts on how students perceive the teachers' communication to affect their effective and cognitive learning and their feeling throughout the learning process. Apart from verbal communication, the course instructor needs to impose attractive teaching styles to capture students' interest in learning and the teaching process by applying non-verbal communication. The effectiveness of learning can be enriched if the course instructor provides non-verbal messages including facial expressions, eye contact or lack of eye contact, proximity and closeness, hand gestures and body language according to Miller (2005) as cited by Barmaki (2014).

2.6 Online Learning Reliability

Judging from the possibility that online learning has the potentials to become the large-scale method of training teachers in the educational field or when compared with the traditional methods, Agarwal and Pandey (2013) agreed that online learning has some merits – low cost, flexible and personalization. They concluded that online learning has various advantages over the traditional techniques of learning. The superiority of online learning can be seen as this platform can be the

most convenient way to pursue a degree in higher education. Students are getting attracted to online learning because of its flexibility, self-paced method of education to attain their degree. Cojocariu et al. (2014), contrarily in their studies arose that the flexibility and autonomy of e-learning cannot be the reliable facets to guarantee student performance due to the limited face-to-face ongoing monitoring, insufficient degree of development of students and responsibility determine the abandonment of consistent learning efforts. Hence, it installs a dropout phenomenon which is more common in this context than in traditional education.

2.7 Instructors and online learning effectiveness

Either using physical face-to-face classroom methods or online platforms, in determining the effectiveness of teaching and learning, it must come back to the instructor itself. This closely relates to how the instructor presents himself as a very competent, knowledgeable and effective lesson conductor to students. Once the instructor has played its role well in learning and teaching, then it is the best time for students' performance to be measured accordingly. This is parallel to what have been argued by Oyediji and Ogunyemi (2000) cited by Dash and Barman (2016) that effective teaching goes beyond just imparting knowledge but it is a resolute activity carried out by individuals with a specialized knowledge in a skilful way to enhance the cognitive, affective and psychomotor development of a person or group of persons. Course instructors must be aware that effective teaching is an art and no easy endeavour. Hence, to make the teaching of a teacher more effective, evaluation of that teacher's teaching performance is in needs to be implemented. Evaluating the performance of teachers in any educational institutions resembles evaluating the learning of students (David and Macayanana, 2010).

3. Methodology

The study aimed to measure the effectiveness of online learning and teaching-based education (PdPdT) in the pandemic of Covid-19 towards students' core course performance and the effect of online learning to the students' learning behavioral development after a full semester undergoing the online classes. Certain attributes of the course instructor in delivering teaching materials in online learning were also emphasized. A total of 30 students were having registered for the core course DPF30033: Financial Market Operation and successfully attending both continuous and final assessments. These students were separated into two classes – DKB3A and DKB3B. These participating students had accomplished all types of

assessments prepared by the instructor including the test, quiz, video presentation, project and alternative assessment – known as the final examination. Marks obtained by students in each assessment will be composed as the primary source in the discussion. A self-developed questionnaire with short questions closely related to the study using the Likert scale was also distributed to students. The Likert scales used in this study were within the range of where the value 1-strongly agree, 2-agree, 3-neutral, 4-disagree and 5-strongly disagree. A descriptive statistical tool will be applied for analyzing the data.

4. Finding and Analysis

The preference to attend online classes is linked to students' perception that online classes have certainly posed contributions to their skills and knowledge. Out of 30 students, 23.3% of them showed their willingness to attend online classes whereby 53.3% of students hesitantly agree and the remaining 23.3% of students were not willing to attend online classes.

We generate marks attained by students once they completed all types of continuous assessments consisting of Quiz (5%), Theory Test (10%), Video Presentation (10%) and Project (25%) as well as the final assessment comprising 20%. In PMBS, those who scored more than 50% are assumed as good performance whereas students with marks less than 50% fall within the poor performance category. Although online learning sounds novel to students, the summarized results found that students managed to obtain more than 50% marks in every assessment assigned to them as illustrated in the Table 1 below.

Table 1: Marks obtained by students based on each type of continuous assessment.

Continuous Assessment Marks			
Assessment	Range (%)	DKB3A	DKB3B
		No. of Students	No. of Students
<i>Quiz</i>	75-100	11	4
	50-74	5	10
	25-49	-	-
	0-24	-	-
<i>Theory Test</i>	75-100	13	12
	50-74	2	2
	25-49	1	-
	0-24	-	-
<i>Video Presentation</i>	75-100	12	11
	50-74	4	3
	25-49	-	-
	0-24	-	-
<i>Project</i>	75-100	7	4
	50-74	9	10
	25-49	-	-
	0-24	-	-

A vivid contradiction is shown in the performance of students in Quiz between these two classes. A number of 11 students from DKB3A obtained more than 75% in their quiz whereby only four students from DKB3B did so. Meanwhile those scoring 50-74% in Quiz seemed greater in class DKB3B with a total of 10 students than merely five students from DKB3A locating themselves within the mentioned range. There were no many differences between students' performance in Theory Test in both classes. In the meantime, there was a student from DKB3A who achieved a poor mark in the test. On the other hand, 13 and two students in DKB3A achieved marks within 75-100% and 50-74% respectively. Students from DKB3B attained good grades for the theory test with a total of 12 students scored more than 75% and two students scored within the range of 50-74%. Quiz and theory tests were tasks assigned to students individually.

Online learning increasingly contributes to the level of skill/knowledge of students to complete the course. To complete assignments on video presentation as well as project, students were required to work in a team. The final results on these assessments found that both classes showed a satisfying performance whereby 12 out of 16 from DKB3A and 11 students in DKB3B managed to score within 75% and above. Every four and two students respectively from DKB3A and DKB3B achieved within 50 to 74%. As students were required to work collectively on Project, the instructor's evaluation directly affected the student's performance. As result, there are seven and four students respectively from DKB3A and DKB3B obtained a grade within 75% and above whereas the majority achieved between 50 to 74% i.e., the remaining nine students in DKB3A and 10 students in DKB3B.

Final assessment/Alternative assessment was conducted online using an essay question format. Students were given a 2-hour duration to answer two main questions which commensurate to certain subtopics that had been thoroughly revised in the online lecture. The table below illustrates the achievements of students on the final assessment.

Table 2: Marks obtained by students on final assessment.

Final Assessment Marks			
DKB3A		DKB3B	
Range (%)	No. of students	Range (%)	No. of students
75-100	10	75-100	9
50-74	6	50-74	5
25-49	-	25-49	-
0-24	-	0-24	-

The combination of continuous and final assessment marks represents the total achievement

of every student. A final grade awarded is considered as a symbol of their overall performance on this core course. In essence, both classes performed well in the final assessment where a majority of students scored within 75 to 100% as depicted in the Table 2.

Table 3: The effectiveness of online learning based on students' insights.

Insights	1	2	3	4	5
Interesting lesson	6.7%	30%	46.7%	16.7%	-
Easier compared to regular (face to face) class	-	26.7%	36.7%	30%	6.7%
Practical method to follow the course effectively	3%	36.7%	46.7%	13.3%	-
More opportunities to collaborate with other students in online classes	-	43.3%	46.7%	10%	-
Disturbing and hurry	13.3%	43.3%	36.7%	6.7%	-
Savvy and cost-efficient	3%	43.3%	46.7%	6.7%	-
Better learning management	3%	26.7%	53.3%	16.7%	-
High quality learning rather than face-to-face classes	6.7%	26.7%	43.3%	23.3%	-
Instructor facilitate the online classes so well	13.3%	50%	26.7%	10%	-
Increased experience to access and use information	6.7%	43.3%	40%	10%	-

We subsequently gathered students' responses on the effectiveness of the course delivery concerning the preparation and ability to understand the learning content via online learning platforms. The Table 3 showed a majority of students took neutral stand that online learning is interesting (46.7%), easier (36.7%) and high quality (43.3%) compared to face-to-face classroom, a practical method to follow the course effectively (46.7%), provide more collaborative opportunities (46.7%), savvy and cost efficient (46.7%) and better learning management (53.3%). In contrast, a majority of students agreed online learning increased experience to access and use information (43.3%) and made instructor facilitate the online classes so well (50%) despite it is hurry and disturbing (43.3%).

The fruitful side of online learning is that its effectiveness becomes a major impact in inclining students' passion to learn and explore their needs as learners. Using online learning platforms students create a collaborative and interactive learning environment so they can prosper their learning behaviors by giving immediate feedback, ask questions and learn interestingly (Swan, 2017). According to Yusnita (2020), more mature students with better independent learning skills were better candidates for online learning.

Table 4: Students' learning behaviors development after attending online classes.

Behaviors	1	2	3	4	5
More engaged in my online course	-	53.3%	40%	3.3%	3.3%
Understood course requirements better	-	40%	53.3%	3.3%	3.3%
Motivated to succeed	-	50%	46.7%	3.3%	-
Felt energetic, confident and active	3.3%	36.7%	50%	6.7%	3.3%
Strong time management skill	-	46.7%	46.7%	6.7%	-
Easily monitor academic progress	3.3%	50%	40%	6.7%	-
Actively asked questions in an online course	3.3%	46.7%	40%	6.7%	3.3%
Well-prepared by making notes and recording the online lecture	6.7%	50%	36.7%	6.7%	-
Participated actively in the discussion	3.3%	56.7%	36.7%	3.3%	-
Nurtured to be a multi-tasking person	3.3%	43.3%	46.7%	6.7%	-

As shown in the Table 4, a majority of students held a neutral position on the influences of online learning towards their learning behaviors whereby students understood better the course requirements (53.3%), felt energetic, confident and active (46.7%) and nurtured to be multitasking person (46.7%). Meanwhile, many students seemingly agreed that online learning engaged them in classes (53.3%), motivated them to succeed (50%), easier to monitor academic progress (50%), encourage them to actively ask questions in an online course (46.7%) and participate in the discussion (56.7%) and well-prepared by making notes and recording the online lecture (50%). A similar number of students respectively agreed and showed neutral stand that online learning leads to a strong time management skill (46.7%).

Table 5: Students' responses on the instructor's attributes in online classes.

Attributes	1	2	3	4	5
An effective lecturer	6.7%	73.3%	20%	-	-
Clear and organized presenter	10%	66.7%	20%	3.3%	-
Stimulated students' interest	13.3%	66.7%	20%	-	-
Effectively used time during class periods	16.7%	70%	13.3%	-	-
Available and helpful	16.7%	70%	10%	3.3%	-
Made prompt and had useful feedback	10%	73.3%	16.7%	-	-

The instructor also possesses significant role in making a quality learning environment for attracting students' attention and interest to follow the lesson effectively. The effectiveness of online learning also needs to be measured from the instructors' side. As shown in the Table 5, a majority of students agreed that the course instructors during online classes played their roles

as effective lecturers (73.3%), clear and organized (66.7%), successfully stimulated students' interest (66.7%), practically use the stipulated duration during the class period (70%), be helpful to students and available during the class (70%) and making a prompt grading and useful feedback regarding students' performance (73.3%). In order to enhance the quality of teaching among the course instructors, they can use a combo of audio, videos, and text to reach out to their students in this time of crisis to maintain a human touch to the content of the lectures (Dhawan, 2020).

Even though online learning has actually been gaining popularity before the outbreak of Covid-19, most higher learning institutions, on the other hand are not fully prepared towards utilizing such methodology. Online learning has its own deficiencies to the point that direct communication and human touch are lost and users are dismayed due to technical difficulties that hinder and slow-down the teaching-learning process (Favale et al., 2020). As the current situation forces us to do so, there are certain detriments from students' side that we need to deal with such as students having lack of resources to present in online classes due to limited and interrupted coverage of internet, non-serious habit in learning among students, they vary in the level of capabilities and confidence, the dilemma with home chores and inadequate of comfort in learning online that leads to frustration and confusion. The instructor must be vigilantly handling the class in the most tactical organization whilst emphasizing bilateral communication between students so they never end up being passive learners.

5. Conclusion

The spread of the deadly disease Coronavirus known as Covid-19 was a sudden big hit impacting all sectors including the education system in Malaysia. It is beyond our control and capability to predict when the pandemic can totally diminish. Amidst this crisis, we have no other alternatives left other than be accustomed to the dynamic situation while adapting to the changes. We must realize the relevancy of online learning in this fast-paced development can be part of the efforts that contribute towards fulfilling educational objectives despite the dependency of the available conventional learning platforms. It is evident through the implementation of PdPdT, students managed to follow the course DPF30033 Financial Market Operations effectively although having certain barriers regarding the interrupted coverage that sparsely occurs, the dim of communication and highly time-consuming at getting used to the online learning applications. Online learning and teaching-based education (PdPdT) is reliable

enough to substitute traditional face-to-face classroom that benefits associated course instructors and students in higher institutions particularly PMBS. Prior proposing the most suitable PdPdT platform, the instructor must provide an inclusive clarification to students regarding the process and structure of the selected learning platform as well as the challenges students possibly encounter during the lesson.

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