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The Relationship Between Students' Perceptions on Online Flipped Classrooms and Academic Performance Between Practical and Theoretical Teaching Approach

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Abstract

The rapid emergence and evolution of online learning has been linked to the COVID-19 pandemic. Since many students are unable to attend physically due to the crisis, the use of an online flipped classroom has been implemented. Currently, there is limited study on the influence of this method in improving students' practical and theoretical approaches. Therefore, the purpose of this study is to investigate the relationship between students' perception of the online flipped classroom and academic performance among physical and theoretical approaches. An online questionnaire was conducted on 300 university students from both theoretical and practical approaches. Students required to answer a set of questionnaires consist of student's perception on online flipped classroom and GPA for the subject. Independent sample t-test and Pearson correlation analysis were used to analyze the data. The results shows that the academic performance between the theoretical and practical approaches was significantly different, *t (3.447), p=.001* but there is no relationship between the students' perception of the online flipped classroom and academic performance between practical, r (150) =0.159, p=.052 and theoretical, r (150) =-.011, p=.889 groups. This study concludes that students in theoretical approach performed well compared to the practical approach in terms of their previous GPA. Theoretical students approach achieved well as they successfully adapt to online learning compared to the practical approach that faces difficulties in applying those skills to the lesson. However, students' perception is not enough to measure its success. Perception of lecturer on student's performance during the class should be considered to be include in the future study.

Keywords: Flipped Classroom, Academic Performance, Teaching Approach, Learning Experiences, Effective Teaching

Introduction

Globalization of technology has become evident in the twenty-first century. Our way of life has evolved as a result of technology, which allows us to access the latest information in an

instant (Bakar, 2019). The use of technology in everyday life has become widespread, and acts universally (Horst, 2012). This progress is also a result of smartphones that have been used. Technology is now widely used, not only for the purpose of saving time but also as a part of daily life for someone who uses technology as a means of communication. In the meantime, technology has taken over as a classroom teaching tool (Calvani, 2009). Current educational teaching tools for future generations include the advancement and incorporation of technology. The development and evolution of technology has an impact on the field of education, improving the level of teaching and streamlining the classroom process. The Malaysian government has urged teachers to include technology more often in their classes and classrooms under the Malaysian Education Development Plan 2013–2025. Utilizing information and communication technology (ICT) to improve Malaysia's education standards is the seventh of the eleven changes to the Malaysian Education Plan (PPPM) system (Ministry of Education Malaysia, 2013). The use of technology in the classroom has clearly increased over the past 10 years (Wasiau, 2013). This shows the importance of technology in both classrooms and universities is highlighted. Traditional education is no longer necessary for students because it is not suitable for them. Technology acts as a teaching act, which is a two-way component, while traditional teaching and learning is more focused on the role of the teacher who conveys information. Students use technology to communicate in a variety of ways while developing their technology skills. According to Cohen (2001), the use of technology affects all aspects of teaching and learning. Incorporating technology into the classroom requires new learning methods and the ability to explore information in new and interesting ways. The framework of the education system has changed from a traditional system to a modern system as a result of technological advancement. Because information and technology are developing so rapidly, education simultaneously follows this pace and develops new teaching methods (Akdemir, Bicer, & Parmaksz, 2015).

The flipped classroom method is a new educational strategy that is outdated by changes and revolutions in the field of education (Toto & Nguyen, 2009). This educational approach differs from traditional teaching because the former focuses on the teacher, while the latter focuses on the student. According to Enfield (2013), the flipped classroom approach encourages students to learn outside the classroom at any time and from any location. Students can move through the classroom at their own pace and complete their activities using materials provided by the teacher regardless of time constraints. The Internet allows students to freely search for the appropriate lessons they want to learn. Flipped classroom pedagogy improves physical education efficiency by allowing students to participate in activities that strengthen the bond between teacher and student. This model creates a student-centered classroom environment as shown by Hamdan (2013). However, the potential of this method needs to be clearly understood. Lack of research on physical health education aspects because some students learn more when the information is presented spatially, auditorily, linguistically, kinesthetically or logically (Fulton, 2014; Zhou & Jiang, 2014). An online flipped classroom is similar to a conventional flipped classroom. Students in an online flipped classroom meet online instead of face-to-face (Stohr, 2020). The online flipped classroom in physical education classes prevents face-to-face interaction between teachers and students leading to a stressful learning environment for those who prefer face-to-face instruction. According to Hodges (2020), online learning is often stigmatized as a weaker option that provides a lower quality of education than face-to-face learning that fosters teaching skills. In the context of the pandemic, online physical education will provide a new experience for both teachers and students. Teachers will have difficulty with this sudden change and will struggle with

unfamiliar teaching methods. This is also a concern for the implementation of flipped classroom pedagogy in improving the learning experience of students in the classroom. This is applied to the method used or students' perception of the flipped classroom to determine its effectiveness. According to Atkins (2018), there is no relationship between student perception and performance in the flipped classroom. This is because low-performing students need more time to adapt to technology in the flipped classroom, which affects their grades. Students think that flipped classroom is conducive to classroom engagement but some of them face difficulties in finding material without teacher guidance. The results of Mahdi (2019) study show that some students face several problems that they consider to be major obstacles, such as lack of computer skills and lack of time to complete assignments. Although the online flipped classroom is recognized in higher education, there are very few studies investigating its effectiveness (Stohr, 2020). Most studies show that the effectiveness of flipped classroom increases significantly in education, but there is no study on students' perception of the effectiveness of online flipped classroom. The reason for introducing this approach is that the flipped classroom is gaining recognition and popularity in other subjects. Flipped classroom can help increase student engagement in learning (Bergmann & Sams, 2012) and also facilitate student learning (Uzunboylu & Karagoezlue, 2017). Literature about flipped classroom was limited, especially in practical-aesthetic subjects (Zainuddin & Attaran, 2015). According to Sargent and Casey (2019), there is limited research on the flipped classroom in physical education, and there is a lack of clear information about how teachers of this subject see the potential to use this method in their classrooms. Therefore, the purpose of this study is to investigate the relationship between students' perception of online flipped classroom and academic performance in a physical and theoretical approach.

Material & Methods

A cross-sectional quantitative survey design was employed involving practical and theoretical approach program among undergraduates' students from the Faculty of Education, Universiti Teknologi MARA, Selangor. A set of questionnaires consist of student's GPA and the perception of the students towards online flipped classroom was distribute thru online. All the gathered data was analyzed using IBM SPSS Version 26. The analysis that was use were descriptive analysis, independent sample t-test for differences of student's academic performance between practical and theoretical approach and Pearson correlation to analyze the relationship between student's perception towards online flipped classroom and academic performance.

Result

Table 1

Demographic

Data		N(%)
Programme	Practical	150 (50.0)
	Theoretical	150(50.0)
	Total	300(100.0)
Gender	Male	98(32.7)
	Female	202(67.3)
	Total	300(100.0)
Current Semester	3	57(19.0)
	4	75(25.0)
	5	62(20.7)
	6	48(16.0)
	7	40(13.3)
	8	18(6.0)
	Total	300(100.0)
Previous GPA	2.49 and below	2(0.7)
	2.50 – 2.99	4(1.3)
	3.00 – 3.49	217(72.3)
	3.50 – 4.00	77(25.7)
	Total	300(100.0)

Table 1 shows the programme distribution which are practical and theoretical approach that collect a total of 300 students. 98 male students covered 32.7% meanwhile female students covered up 63.7% which is 202 students. The number of respondents according to each semester. Semester 3 has 57(19.0%) students, semester 4 has 75 (25.0%) students, semester 5 has 62 (20.7%) students. Semester 6 has 48(16.0%) students, semester 7 has 40(13.3%) students and semester 8 has 18(6.0%) students. Academic performance of these two groups is where 2.49 and below have 2 respondents, 2.50 to 2.99 have 4 respondents, 3.00 to 3.49 have 217 respondents and 3.50 and above have 77 respondents.

Table 2

Differences between practical and theoretical approach

		Levene's Test for Equality of Variance		**T-Test for Equality of Means**			
		F	**Sig.**	**t**	**Sig. (2 tails)**	**Difference Min**	**Std. Error Differences**
Previous GPA	Equal variances are assumed	53.309	.000	-3.447	.001	-.193	.056
	Equal variances re			-3.447	.001	-.193	.056

Table 2 show the independent sample t-test to compare mean scores of academic performances (GPA) between practical and theoretical approach group. Researcher visually inspect inspected Q-Q plot and normality was assumed. There are significant differences between practical and theoretical approach t (3.447), p=.001.

Table 3
Relationship between students' perception and academic performance

Group			Perception	previous GPA
Practical	Perception	Pearson correlation	1	.159
		Sig. (2 tails)		.052
		N	150	150
Theoretical	Perception	Pearson correlation	1	-.011
		Sig. (2 tails)		.889
		N	150	150

Table 3 shows the Pearson correlation analysis to examine the correlation between students' perception and academic performance for practical and theoretical approach groups. Both groups show no significant correlation between students' perception and academic performance with practical, r (150) =0.159, p=.052 and theoretical, r (150) =-.011, p=.889.

Discussion

The pandemic situation causes students to experience using social media as a teaching and learning medium. Flipped classroom is the best method to train students and teachers to increase digital literacy and control the learning process. According to Bursa and Kose (2020), teachers and learners emphasize that e- learning videos have an equivalent effect in increasing academic achievement. This shows that flipped classroom helps students throughout the digital lessons provided. The majority of students think that flipped classroom helps them complete assignments and makes them more prepared to attend class. According to Akçayr (2018), the negative aspects of flipped classroom are also mentioned, such as the increased workload felt by some students. However, some significant studies (Killian, Trendowski, & Woods 2016; Zainuddin & Halili, 2016; Osterlie, 2018) have found that flipped classroom help provide more class time for hands-on activities and teachers have more opportunities to provide feedback. The effectiveness of flipped classroom based on academic performance, both groups showed different levels of performance where theoretical group shows higher score compared to practical group. The pandemic situation that occurred caused the implementation of an online flipped classroom which simultaneously changed the learning process of students in a practical and theoretical approach. Therefore, practical approach students need to adapt and learn physical activities online. In addition, physical education students need more time to adapt the use of technology as a learning process in physical activities. In addition, the academic achievement of physical education students is the lowest because students have to transfer skills with limited sports equipment and facilities. This will affect the learning outcomes of students based on their academic performance. However, in contrast to practical, theoretical student approaches easily adapt to new teaching and learning. Despite the difficulty of technological barriers, these students lacked the physical skills to transfer them in the lesson. Thus, lecturers are able to convey and deliver lessons due to the students' comfort in adapting new teaching and learning. Thus, there is a significant difference in academic performance based on two group of population which shows that differences in learning approaches will affect academic achievement. There

is no significant correlation between students' perception of online flipped classroom and academic performance among practical and theoretical approaches. A study from Atkins (2018) states that there is no correlation between high and low achievement with the perception of a flipped classroom. This study shows that students' perception cannot measure the academic performance. As mentioned before, physical education students need time in adapting the online flipped classroom which involves a lower perspective on it. This also applies to Mathematics students because their perspective on the online flipped classroom is low and does not show a correlation between academic performance. Thus, a study from Atkins (2018) states that there is no correlation between student's perception and student achievement in flipped classroom**.**

Conclusion

The study showed that students in theoretical approach performed well compared to the practical approach in terms of their previous GPA. Theoretical students approach seems to achieved well as they successfully adapt to online learning compared to the practical approach that faces difficulties in applying those skills to the lesson. However, students' perception is not enough to measure the influence of online flipped classroom on academic performance. Therefore, researcher would like to recommend to include the perception of lecturer on student's performance during the class should be considered to be include in the future study.

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