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Readiness of Physical Education Teachers Implementing Flipped Classroom Approach: A Comparison of Gender and Relationship with Teaching Experience

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ABSTRACT

This study aims to determine the readiness of physical education (PE) teachers in implementing a flipped-classroom approach in teaching. Quantitative methods using descriptive and correlation approaches were conducted on 256 PE teachers. The findings of the study show that the readiness of teachers in terms of institutional support, technology self-efficacy, teacher beliefs, and teaching strategies are at a high level. There was no significant difference in the readiness of PE teachers in implementing a flipped-classroom approach in gender-based teaching. However, a significant relationship occurs between teachers' readiness and experience in teaching PE subjects. The results of this study provide implications for teachers to equip themselves to increase readiness in implementing flipped classrooms. Thus, this study can be used as a stepping stone for future studies to further enhance the readiness and implementation of flipped classrooms among PE teachers.

Contribution/Originality: This study is one of the few that has investigated PE teachers' readiness to use a flipped classroom approach during the teaching and learning process in classrooms. Furthermore, the study's main contribution is to provide important information to curriculum writers, administrators, and teachers on how to improve students' engagement and learning in PE courses through a better quality and effective teaching and learning process.

1. Introduction

The 7th shift in the Malaysian Education Development Plan (2013-2025) emphasizes the use of Information and Communication Technology (ICT) to advance the quality of learning in Malaysia. The rapid development of technology has brought revolutions in the field of education as the use and integration of ICT has begun to be introduced in

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schools. This transformation phase has led to the reformation of teaching in the classroom, where various teaching methods were explored to ensure that teaching and learning remain fun and rewarding (Halili & Sulaiman, 2018). According to Mustafa and Salleh (2019) technology-based teaching approach is an alternative to the surrogate traditional teaching approach which is reported to give positive significance in the teaching process.

Based on the intentions of the Physical Education (PE) curriculum, teachers' teaching methods and strategies are the main keys that need to be emphasized during the teaching and learning process regardless of if a male or a female teacher is conducting PE (Razak et al., 2018). PE instruction must be implemented with greater commitment to ensure and increase student involvement in PE activities (Pavlova et al., 2017). With today's technological advancements in education, traditional PE teaching methods can no longer be practiced. However, the lack of experience and methodologies used in the application of ICT in the PE curriculum leads to not flawless teaching. McNamara and Dillon (2020) agreed that PE teaching should be continued by planning the objectives of PE integrated ICT that are centered on students in promoting physical and social activities. It was discovered, however, that teachers find it difficult to integrate aspects of ICT into the teaching of PE (Villalba et al., 2017). Teachers frequently encounter obstacles in the process of integrating ICT in PE teachings, such as a lack of time in describing physical activities, a paucity of reference sources, time constraints in preparing materials, a shortage of content knowledge, and technical issues. Therefore, Ní Chróinín et al. (2020) agreed that a new and creative teaching method needs to be explored to address the problems that arise so that the integration of ICT in PE can be carried out without hindrance.

Moreover, past studies have proven that the application of new methods involving technology has a positive impact (Ambikapathy et al., 2020; Zainuddin & Halili, 2016). Bergmann and Sams (2012) have discovered a teaching method that uses a flipped-classroom approach. The use of a flipped classroom method approach in the era of modernization of teaching and learning nowadays acts as an active facilitator method that emphasizes the active learning of students (Said, 2020). However, PE teachers are still uncertain about the effectiveness of using the flipped classroom methodology to deliver their teaching (Wasriep & Lajium, 2019). This is compatible with Østerlie (2020) assertion that the use of flipped classroom teaching methods in practical subjects such as PE still appears to lack a clear guiding framework. This statement was also supported by Cushion and Townsend, (2019) and Sargent and Casey (2020), who outlined that there is no specific instructional design for flipped classroom teaching as it is frequently adapted and adopted in the context of teaching PE subject. Furthermore, a content analysis study conducted by Zainuddin et al. (2019) based on 48 flipped classroom refereed journals found that no studies were reported in Malaysia from 2017 to 2019 that led to teaching using the flipped classroom method in PE subjects. Therefore, efforts to incorporate the integration of modern technology in the teaching and learning of PE are highly expected to increase students' interest in learning towards the potential for learning development.

Based on the description of the problems that arise among PE teachers, the readiness of PE teachers in the integration of technology and the implementation of flipped classroom teaching methods are less reported. Thus, this study leads to a study of PE teachers' readiness from the perspective of teaching based on technology integration, where the factors influencing the implementation of flipped classes are examined from

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the perspectives of institutional support, technological self-efficacy, teacher beliefs, and PE teachers' teaching strategies. As a result, this study will indeed look at the demographics of PE teachers, specifically gender differences and teaching experiences as independent variables, since previous researchers indicate inconsistent findings on these two factors, which are related to teachers' incorporation of technology, flipped classroom method (Hun et al., 2020). Consequently, the relationship between gender difference factors, which are biological factors of teachers' self, and teachers' teaching experience, which is believed to affect the teaching of PE teachers, is correlated in the implementation of flipped classes because previous studies somewhat less touched on these two factors.

2. Literature Review

2.1. Readiness of PE teachers in implementing the flipped classroom

In general, the goal of implementing flipped classrooms or also known as to shorten the duration of teaching lectures in teacher-centered classrooms while maintaining the planned lesson content (Jdaitawi, 2019). The flipped classroom, also known as blended learning, is a teaching model that prioritizes online teaching materials over face-to-face instruction in the classroom (Noh et al., 2017). Pupils also have the opportunity to access learning materials that have been given according to their convenience and time. The classroom time is completely dedicated to learning activities, collaboration, and the reinforcement of individual student learning, which can benefit the time allotted (Lai & Hwang, 2016). However, teachers' readiness to accept a flipped classroom teaching approach is intimately associated with an individual's ability to deliver technology-based learning content (de Araujo et al., 2017). According to Aljaraideh (2019), in the flipped classroom, teachers serve as facilitators by guiding and arranging learning activities that students can practice using various techniques such as self-learning and preparing for face-to-face discussions in the classroom. However, the transition from traditional classroom teaching methods to flipped classroom teaching methods presents significant challenges for teachers in stepping away from the old practiced notch and becoming a facilitator in stimulating student engagement and motivation to learn (Awidi & Paynter, 2019). Furthermore, Wasriep and Lajium (2019) reported that teachers frequently face challenges when incorporating technology that is contextualized to aspects of skills into current teaching. As a result, to overcome obstacles in the teaching process, the readiness of teachers in the implementation of the flipped classroom should be investigated. Teacher readiness is one of the essential factors in assisting the students in adapting to the new learning environments and strategies that integrate new technologies (Halili & Sumathy, 2018).

2.2. Institutional support towards the implementation of the flipped classroom

One of the most important factors influencing teachers' ability to successfully implement flipped classroom teaching is the institutional support itself (Goedhart et al., 2019). Indeed, this matter has been highlighted by Satangah and Abdullah (2021) that the support and commitment of school institutions is one of the main indicators in driving the effectiveness of knowledge delivery and thus contributes to the quality of teacher teaching. In addition to this, institutional support is categorized into three: administrator support, colleague support, and a positive organizational environment (Joo et al., 2011). Support from administrators and colleagues in the use of technology in education can also have a positive impact on shaping teaching practices and it also

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influences teacher's satisfaction, which is also a major impetus in the implementation of information technology-based teaching and learning (Hamidah & Halim, 2018). Whereas, Wanner and Palmer (2015) discovered that using the flipped classroom method for teaching and learning requires teachers' time commitment in designing the flipped classroom teaching and learning. Moreover, to ensure that change takes place sustainably, the school must ensure that this initiative begins comprehensively because the teachers are the ones who will determine an initiated change to remain in place. Therefore, the support of administrators and organizations is essential to attract the interest of teachers to be equally involved in any teaching-based changes to be carried out at the school level (Ibrahim & Abdullah, 2014). In conjunction with this, Physical education teachers' perceptions of obtaining institutional support in the context of this study were based on those of administrators, colleagues, and organizations involved in the implementation of the flipped classroom. As a result, school administrators' cooperation in improving physical education teachers' practices was found to be relatively lacking (Som et al., 2020). Nonetheless, according to DeBacco, (2020), the support of administrators and organizations affects the effectiveness of implementing flipped classrooms for student learning.

2.3. Technology self-efficacy towards the implementation of the flipped classroom

Flipped classroom implementation involves face-to-face interactions between teachers and students, as well as the use of technology advancement (Bishop & Verleger, 2013). Teachers play a significant role in integrating technology into the classroom and in the preparation of students to learn (Lie & Yunus, 2019). Teachers, on the other hand, are overworked when it comes to creating instructional resources such as videos to be used in the flipped classroom approach (Arabacıoğlu et al., 2020) from another perspective, teachers who have adopted the flipped classroom approach are more able to develop their teaching resources, such as videos, even though existing videos are available. These teachers also contended that their students are more interested in videos created by their respective teachers (Wanner & Palmer, 2015). Furthermore, the rise of digital technology usage is now closely linked to the flipped classroom approach, which requires the systematic utilization of teaching technology (Cheng et al., 2019). Consequently, teachers' competence and effectiveness in the use of technology must be reviewed. Previous research has revealed that teacher technology self-efficacy is a factor influencing a teacher's ability to incorporate technology in their classroom teaching (Khan et al., 2018; Shaw et al., 2018), however, Rahman et al. (2019) asserted that teacher technology self-efficacy is not related to teachers' hesitation to use technology in their teaching in the classroom. These contradictory findings highlight the need for a comprehensive study of PE teachers' self-efficacy in using technology in flipped classroom teaching. In general, self-efficacy or self-consciousness is defined as a person's ability to plan and carry out an action to achieve the desired result. Thus, a person with a high and strong level of self-efficacy would be able to act with a greater extent of effort to complete a task and may strive continuously in difficult and challenging circumstances (Bandura, 1977). Moreover, the self-efficacy of technology in the context of this study focuses on teachers' self-confidence and in their successful integration of technology in teaching rather than their competence in the implementation of the technology in teaching.

2.4. Teachers' beliefs towards the implementation of the flipped classroom

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The process of good teaching and learning begins with the instructor (Batjo & Ambotang, 2019). Conventionally, the teaching and learning process requires students to listen to lectures and take notes as well as review lessons using notes taken in the classroom (Egbert et al., 2015). These conventional teacher-centered teaching methods have recently given way to student-centered learning/teaching methods (Noh et al., 2017). Therefore, teachers must have confidence in themselves to diversify teaching methods because they serve as transformational leaders in conveying knowledge through the use of contemporary student-centered teaching methods (Rahman et al., 2014). According to Sargent and Casey (2020), most teachers who are using flipped classroom room teaching methods seem to be optimistic that they can significantly impact student learning by optimizing teaching time and keeping students engaged and active. Nonetheless, Cevikbas and Kaiser (2020) argued that teacher self-confidence can develop paradigmatic barriers in enforcing the flipped classroom approach of teaching and learning. Similarly, teachers' self-confidence can be a barrier to integrating technology in the classroom, and this is closely related to teachers' competencies and skills (Abuhmaid, 2020; Hashim & Shaari, 2020). Aziz and Basry (2017) define self-confidence as a person's ability and self-confidence toward the competence or ability possessed to face the challenges of the task. When the task can be completed responsibly, self-confidence will bring a sense of pride and self-motivation. This interpretation is aligned with Bandura (1997) assertion that self-confidence is a person's belief in his or her ability to perform responsibilities in accordance with his or her hopes and desires. As a result, teachers with high self-esteem can carry out their duties, obligations, and responsibilities as educators more effectively (Sulfemi, 2020). Furthermore, teachers' self-confidence has a significant impact on the relationship between teachers and students when it comes to following their learning. Thus, PE teachers' self-confidence and ability to integrate technology into their teaching are expected to have a significant impact on the achievement of the flipped classroom (O'Neil & Krause, 2019).

2.4. Teaching strategies towards the implementation of the flipped classroom

Based on the government's desire for world-class education, educators should embark on a paradigm shift that focuses on the development of carefully curated teaching strategies in the classroom (Shaari et al., 2017). Teachers employ teaching strategies to deliver learning materials in a focused manner throughout as an aim to maintain students' engagement in learning. Physical Education generally requires teaching techniques that are appropriate for students' diverse intelligence levels to retain a holistic education. Teaching strategies can be evaluated based on teachers' ingenuity and competence in selecting appropriate approaches and techniques for implementing the teaching and learning process (Kilue & Arifin, 2017). The flipped classroom teaching methodology is generally based on students' active participation in their learning. Active learning refers to students' active involvement in classroom activities such as problem-solving, discussion, and collaborating with other students while problem-solving refers to activities involving reading books, watching videos, and listening to pre-lectures outside the classroom (Thai et al., 2017). The research literature highlights a variety of teaching techniques that teachers can use while implementing flipped classroom teaching. Kaviza (2019) studied the relationship of the flipped classroom approach combined with the Peer Instruction technique on critical thinks and it is discovered that this strategy enables students to enhance and improve their thinking maturity. A study by Zanariah (2017) showed that the use of flipped classroom pedagogy modules based on reflective learning is effective in helping students relate skills to knowledge. Along

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with this, students' critical thinking ability is also increased by combining Problem Based Learning strategies with the use of flipped classroom methods in Mathematics learning (Ramadhani et al., 2020). Diversifying teaching strategies by incorporating flipped classroom methods is difficult to execute and may necessarily require repeated practice by teachers (Chou et al., 2020). Therefore, this research aims to determine the technique used by teachers in the implementation of flipped classrooms.

2.5. Differences in teacher readiness and teaching experience of physical education teachers based on gender

Gender differences are an important factor in the implementation of the essential tasks of teachers. Teachers' readiness in terms of gender factor is an internal characteristic that influences teachers' beliefs in technology integration (Rubach & Lazarides, 2021) and there is a possibility that this factor becomes dominant in the effectiveness of technology integration (Hsu et al., 2017). This is because, recent studies reported that male teachers are found to be more inclined and have a higher readiness in the use of technology compared to female teachers in producing digital learning and teaching content materials (Angelina et al., 2021; Iywon & Nasri, 2020; Rubach & Lazarides, 2021; Tou et al., 2020). Nevertheless, studies by Semerci and Aydın (2018), Díaz-Barahona et al. (2018), Minaz et al. (2018), Olafare and Adeyanju (2017) discovered that there are no gender differences between teachers in integrating technology. Selvi and Stella (2021) stated that female teachers have high exposure and are more skillful in implementing technology in teaching and ICT in developing a collaborative learning environment. In addition, Abuhmaid (2020) stated that female teachers have a stronger perception than male teachers where learning using the flipped classroom method affects students and teachers towards technology integration. These findings of various studies among researchers made the aspect of gender differences a variable that inevitably to be included in the study to find out the eagerness of physical education teachers in Kuala Lumpur in implementing the flipped classroom approach in their teaching.

2.6. Relationship between physical education teachers' readiness and teaching experience

Teachers are entrusted with implementing students' teaching and learning processes (Aljaraideh, 2019), and teacher's readiness is an integral factor in developing innovative learning approaches that incorporate technology (Halili & Sumathy, 2018). Teacher readiness is defined as a situation or circumstance that indicates a person is prepared to implement educational reforms and advancements. According to Gill and Dalgarno, (2008), teachers' readiness to perform a task effectively is determined by their maturity and experience. Thus, Akerson et al. (2000) stated that teachers with more than five years of teaching experience are more experienced, whereas teachers with less than five years of teaching experience are less experienced. The term "teaching experience" refers to empirical knowledge gained through the interaction of work environment factors (Johari et al., 2009). The duration of a teacher's teaching experience throughout their career influences the effectiveness of a specific teaching and learning method used (Lovorn, 2017). However, there are contradictory instances where teaching experience does not play a significant role in influencing teachers' readiness to integrate technology (Bakar et al., 2020). Previous research on the relationship between teaching experience and the integration of technology in teaching and learning has yielded contradictory results. According to reports, the use of technology and ICT based on teaching

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experience does not provide a significant relationship among teachers (Hata & Mahmud, 2019; Zakaria et al., 2017).

In contrast, studies show that teachers with more teaching experience have the ability and capability to integrate teaching technology better than teachers with less teaching experience over 10 years (Bahador et al., 2018) and Tou et al. (2020) support the notion that teachers with more teaching experience have a more positive attitude toward the use of ICT and technology than teachers with less teaching experience. However, the findings of a study by Nawi et al. (2020) reported diametrical findings where teachers with less than 10 years of teaching experience had advanced utilization of technology than teachers with more than 10 years of teaching experience. In the field of physical education, Kretschmann (2015) reported that teachers with less teaching experience, as opposed to experienced teachers, have a higher intention to explore the use of technology in teaching. Furthermore, physical education teachers with extensive teaching experience have no difficulty integrating traditional physical education teaching and learning methods, even though there is no connection between teaching experience and technology integration in the classroom (Ali et al., 2018). Besides this, teachers who are experienced in the classroom but new to the use of ICT need more motivation from a myriad of perspectives, including administrators and institutional support, to motivate and increase teachers' enthusiasm and engagement in using ICT elements and incorporation of technology into the curriculum (Ravendran & Daud, 2020).

2.7. Aim Of Study

Given this, the present study has three objectives: (a) to gauge teachers' readiness to implement a flipped classroom approach in the teaching of PE from the aspects of institutional support, technological self-efficacy, teacher beliefs, and teaching strategies, (b) based on gender differences and (c) to determine the relationship between teachers' readiness and experience in teaching among PE teachers in Kuala Lumpur.

3. Methodology

The study design uses the quantitative approach, employing a survey method to collect data directly from the subjects studied, and therefore can make population-wide generalizations (Creswell & Creswell, 2018). In this study, quantitative data were analyzed by using descriptive statistics and correlations. Descriptive statistical analysis involving the calculation of mean values and standard deviations was used to describe the items in the questionnaire while inferential statistical analysis involved the calculation of the correlation value of the relationship between the variables in this study.

3.1. Sample

A total of 256 teachers from Kuala Lumpur's secondary and primary schools were chosen to be involved in this study. The sample for this study was determined by using Krejcie and Morgan (1970) Sample Size Determination Table. The sample size was determined based on the total population of PE teachers in secondary and primary schools as reported by the Department of Education of the Federal Territory of Kuala Lumpur, which is 758 PE teachers. In this study, 256 study samples were chosen at random. All respondents were indeed PE teachers who teach in primary and secondary

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schools in four different zones of the Federal Territory of Kuala Lumpur. In the context of this research, respondents' backgrounds were distinguished by gender and teaching experiences. A total of 117 survey respondents were male teachers representing 46.2% percent of the total number of participants involved in the study. Meanwhile, 54.3 percent of respondents were female teachers, bringing a total of 139 people. 45.7 percent of the respondents have less than five years of teaching experience. 64 people responded to studies with 6 to 10 years of teaching experience, followed by 36 people, 22 people, and 36 people with 11 to 15 years and 16 to 20 years of teaching experience, respectively. A total of 6.7 percent of survey respondents have more than 21 years of teaching experience. This study includes four research participants with 31 to 35 years of teaching experience.

3.2. Instrument

The instrument was a questionnaire that was adapted, and the questions items were translated from English to Malay using a back-to-back translation method with two language specialists for the Malay version translation process. The questionnaire was divided into two significant parts: part (a) the respondents' background and part (b) the respondents' willingness to adopt a flipped classroom strategy from institutional support aspects, self-efficacy technologies, teacher values, and teaching strategies. Items in part (b) This questionnaire was developed by Chou et al. (2020) which use a five-point rating scale "1=Strongly Disagree", "2=Disagree", "3=Neutral", "4 = Agree", and "5=Strongly Agree". The research instrument will be pioneered using 30 respondents from Selangor who have background characteristics similar to the study respondents to determine the validity and reliability of the instrument. The researcher had obtained written approval from the Education Policy Planning and Analysis Division, Ministry of Education, to extend to the State Education Office of Kuala Lumpur. The questionnaire was circulated electronically via Google Form to the official email addresses of schools in Kuala Lumpur. It was proposed that teachers devote 14 working days to fill out Google Form Questions online.

3.3. Statistical Analysis

The SPSS version 25.0 software was used to interpret this study's findings. The level of readiness of PE teachers in integrating a flipped-classroom approach in teaching was determined using descriptive statistics including mean value and standard deviation. In this analysis, the mean value is represented using the average score table from the Peng and Hamad (2018). The Min Score Interpretation is as follows: a value of 1.00 to 1.89 indicates a very low level, a value of 1.90 to 2.69 implies a low level, a value of 2.70 to 3.49 represents an average level, a value of 3.50 to 4.29 indicates a modest level, and a value of 4.30 to 5.00 signifies a very high level. Spearman's correlation test was used to determine the relationship between teacher readiness factors for incorporating a flipped-classroom approach in the teaching of PE and experience teaching the subject of PE. The correlation coefficient (R) is a value that is used to test the reliability and validity of a relationship between two variables. R-value has an interval value between 0.00 and 0.20 indicating that the relationship's strength is poor and marginal, a value between 0.21 and 0.40 indicating that the relationship's strength is minimal, the value of intervals between 0.61 and 0.80 with a positive relationship is high, and the value of intervals between 0.81 and 1.00 with a significant connection is very high. The presence of a positive correlation coefficient indicates that one variable is directly proportional to

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another. Although negative value coefficients indicate the opposite, positive value coefficients indicate the opposite.

4. Result

4.1. Teacher's readiness implementing a flipped-classroom approach in teaching of physical education

Descriptive statistics have been used to determine the level of teacher's readiness in implementing a flipped-classroom approach in the teaching of PE comprising institutional support aspects, self-efficacy technology, teacher's belief, and teaching strategies such as Table 1.

Table 1: Frequency distribution, percentage, mean and standard deviation of institutional support factors

No.	Teacher's Readiness	Mean	SD	Interpretation
1	Institutional Support	3.94	0.68	High
2	Technology Self-Efficacy	3.83	0.69	High
3	Teacher's Belief	3.77	0.72	High
4	Teaching Strategy	3.80	0.68	High
	Overall	3.83	0.62	High

The readiness of teachers towards institutional support variables, self-efficacy technologies, teacher beliefs, and teaching strategies are indeed very high. The factors influencing teacher readiness, institutional support factors (M = 3.94, SD = 0.68) have the highest mean, led by technology self-efficacy factors (M = 3.83, SD = 0.69) and teaching strategy factors (M = 3.80, SD = 0.68). As compared to other factors, the teacher belief variable (M = 3.77, SD = 0.72) has a low mean. As a result, it can be inferred that in this research, the degree of teacher preparation to adopt a flipped-classroom approach in the teaching of overall PE is high.

4.2. Differences in teacher readiness and teaching experience of physical education teachers based on gender

A one-way Manova test was performed to determine whether there was a gender disparity in teachers' ability to adopt a flipped-classroom approach in PE. In this analysis, the justification for administering a one-way Manova test has been fulfilled since the researcher has already undertaken the normality and homogeneity of Covariance tests. Skewness and Kurtosis statistics indicate that male teacher institutions (0.17, -1.06) and female teachers (-0.05, -0.50), as well as male teacher technology self-efficacy (-0.48, 0.72) and female teacher technology self-efficacy (0.14, -0.28), Male teacher belief (-0.13, -0.56) to female teacher (0.11, -0.31), while also male teacher teaching strategy (0.15, -0.73) to female teacher (0.14, -0.38), signify a variation of -2 to +2. This implies that the propagation of the teacher's readiness data utilizes a flipped-classroom approach which can be cultivated normally. The Box'M test reveals a covariance similarity for each dependent variable based on the compared gender group with values f = 1.397, sig = 0.174 (p> 0.001). As a result, the presumption of a one-way Manova analysis has been achieved and the test can be performed.

The Wilk Lambda test reveals no significant variations in teacher readiness to incorporate a flipped-classroom approach in PE teaching based on gender, with f (1,

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254) = 0.992, sig = 0.744 (p> 0.05). The distinction for each element of preparation can be seen in depth in the Test Between Subject Effects, such as Table 2 below.

Table 2: One-Way Manova: Test Between-Subject Effects

Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Institutional Support	.024	1	.024	.053	.819	.001
Technology Self-Efficacy	.089	1	.089	.185	.667	.001
Teacher's Belief	.080	1	.080	.155	.694	.001
Teaching Strategy	.047	1	.047	.102	.750	.001

In terms of institutional support, the test between subject effect reveals that there is no significant difference in teachers' readiness to adopt a reversible class approach in PE teaching based on gender [F (1,254) =.053, sig =.819, p> 0.05], self-efficacy technology [f (1,254) =.185, sig =.667, p> 0.05], and teacher belief [f (1,254) =.155, sig =.694, p> 0.05]. .05] as well as the teaching strategy [f (1,254) =.102, sig =.750, p> 0.05].

The Table 3 demonstrates that the mean for any element of a teacher's preparation to adopt a flipped classroom strategy in PE instruction based on gender is almost the same. This implies that male and female teachers are equally mindful of the benefits of using a flipped-classroom approach in PE instruction.

Table 3: Estimated Marginal Means

Dependent Variable	Gender	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Institutional Support	Male	3.93	.06	3.81	4.06
	Female	3.95	.06	3.84	4.07
Technology Self-Efficacy	Male	3.85	.06	3.72	3.98
	Female	3.81	.06	3.70	3.93
Teacher's Belief	Male	3.75	.07	3.62	3.88
	Female	3.78	.06	3.66	3.90
Teaching Strategy	Male	3.78	.06	3.66	3.91
	Female	3.81	.06	3.70	3.92

4.3. Relationship between physical education teachers' readiness and teaching experience

Table 4 shows the significant relationship between teachers' readiness to implement a flipped-classroom approach in PE teaching with teaching experience. Negative relationships with weak relationship strength are obtained towards teacher's readiness against institutional support variables, with r = -0.153 values and sig = 0.014 (p 0.05). The technology's self-efficacy factor indicates no significant relationship between teacher readiness and teaching experience. Teacher readiness towards the teacher belief factor does indeed have a negative relationship with weak relationship intensity, with r = -0.204 values and sig = 0.001 (p 0.05). Teacher readiness and teaching experience have no significant relationship with the technology's self-efficacy factor. Where r = -0.204 values and sig = 0.001 (p0.05), teacher readiness of teacher belief factor indicates a negative relationship with poor relationship strength. Negative relationships with weak strength are also being obtained on the readiness of teachers with teaching

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experience for teaching strategy factors with r = -0.142 values and sig = 0.023 (p <0.05). According to the findings, there was a negative correlation between teacher readiness to incorporate a flipped classroom methodology in PE teaching with the teaching experiences for institutional support reasons, teacher beliefs, and teaching strategies. In addition, the findings also show that there is no relationship occurs among the teacher's readiness in implementing a flipped-classroom approach in the teaching of PE based on technology's self-efficacy factor. As such, the effectiveness of the teacher's technology does not affect the execution of the flipped classroom approach where the period of teaching experiences among teachers does not affect the readiness of teachers in implementing a flipped classroom teaching.

Table 4. The Spearman correlation relationship between teacher readiness and teaching experience.

Relationship	Teaching Experience		Interpretation
	r	Sig.	
Institutional Support	-0.153	0.014	Weak
Technology Self-Efficacy	-0.117	0.061	-
Teacher's Belief	-0.204	0.001	Weak
Teaching Strategy	-0.142	0.023	Weak

5. Discussion

5.1. PE teacher readiness in performing a flipped classroom

The findings show that PE teachers who teach in secondary and primary schools in four different Zones in Kuala Lumpur Federal Territory have a high readiness in implementing a flipped-classroom approach in the teaching of PE. This study's results demonstrated that the teacher was willing and received a decent class teaching approach. Furthermore, the results of this study contradict the findings of Wasriep and Lajium (2019), who stated that teachers often face difficulties in integrating teaching methods with present technology, which corresponds to skill aspects. The findings indicated that educational teachers acknowledge and encourage the use of the flipped classroom approach to aid them in the teaching process as well as the pupils in the learning process (Halili & Sumathy, 2018), in which the findings show that educational teachers agreed and supported the use of the flipped classroom approach to help them in the teaching process and the pupils in the learning process.

5.2. Institutional support towards the implementation of the flipped classroom

In line with the findings of the previous study, the findings of the study on the support factor of institutions showed the highest mean score where institutional support factors had an important role in the readiness of teachers implementing a flipped-classroom approach (Satangah & Abdullah, 2021). This contradicts the findings of a study by Som et al., (2020), which found that school administrators' cooperation in changing the teaching practices of PE teachers is still at a relatively low level. Moreover, the results of this study are backed by Long et al. (2017) research findings, which revealed that institutional and colleague support leads to encouragement for teachers who use the flipped classroom approach, as well as promoting the approach to all other colleagues. As such, the success of the flipped classroom teaching approach not only requires support from the administrator and the encouragement and assistance from colleagues is indispensable to guide and assist in the provision of steady and quality teaching.

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5.3. Technology self-efficacy towards the implementation of the flipped classroom

As per results from research on the self-efficacy factor of teacher technology, PE teachers are capable of and competent in using computers and the Internet, but they lack confidence in designing and developing the video required as a teaching aid in incorporating a flipped-classroom approach in the teaching of PE. According to Arabacıoğlu et al. (2020) increased job duties, such as designing video instructional tools for teaching using flipped classroom approaches, often overwhelm teachers and lead them to lose interest. PE teachers, on the other hand, contend that incorporating technology into instruction with a flipped-classroom approach enhances students' learning. According to the findings, almost half of PE teachers agreed that using the flipped classroom approach promotes students by increasing their ability to communicate via technologies and strengthening student-teacher collaboration. Despite that Khan et al., (2018) and Halili and Sumathy (2018) used a sample study from non-skilled education sectors, the analysis reveals correlations where teacher technology self-efficacy is a factor affecting a teacher's willingness to incorporate technology in their teaching, and it influences student learning.

5.4. Teachers' beliefs towards the implementation of the flipped classroom

Teachers' confidence in using a flipped-classroom approach to teaching is significantly at a very high level, as desired by O'Neil and Krause (2019), who believe that quality teaching and learning begins with the teacher. Besides this, PE teachers claim that by using a flipped-classroom approach, they can induce transformation and enhance student learning. As such, the implementation of the flipped classroom approach is accepted by teachers who prioritize the quality learning of students. Consequently, in the forthcoming research, teachers' conviction variables related to intrinsic motivation should be studied so that the evaluation of teacher readiness can be analyzed in depth. Consequently, in the forthcoming research, teachers' perception variables related to intrinsic motivation should be studied so that the evaluation of teacher readiness can be analyzed in depth.

5.5. Teaching strategy towards the implementation of the flipped classroom

Implementing quality teaching and learning processes generally requires the use of effective teaching strategies. PE teachers, on the other hand, seem to be less coordinated in their use of various teaching strategies. PE teachers, on the other hand, acknowledge that using a flipped-classroom approach in teaching affects knowledge acquisition and communication skills, which will aid students with a range of needs. Previous research, Ramadhani et al. (2020), have stated that different approaches have been implemented in introducing a flipped-classroom approach; however, Chou et al. (2020) contends that diversifying the teaching strategy by combining the flipped classroom approach is not only difficult to adopt but also allows teachers to continuous practice. Therefore, teachers should focus primarily on technology-integrated teaching strategies to attain quality teaching and learning processes as well as improve the status of national education.

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5.5. Differences in teacher readiness and teaching experience of physical education teachers based on gender

As a teacher, the implementation of teaching and learning strategies can affect your pupils. Despite gender differences, teachers' readiness or male or female self-esteem in adopting a reversal class teaching approach that incorporates technology does not indicate a difference in perception among PE teachers. Consequently, gender disparities among PE teachers in Kuala Lumpur have no direct effect on teachers' readiness to enforce teaching using a flipped classroom method based on technology integration, as PE teachers undergo PE teaching training/courses with holistic. Furthermore, technical advancements in education provide teachers with sufficient access to technology integration in teaching, which is now a necessity. This is indeed due to the effects of the COVID-19 pandemic, where the instructional approach that incorporates this technology is growing and has opened up space for PE teachers to use technology applications in the course of online teaching activities for the implementation of home teaching and learning.

Hence, the findings of this study are compared to the findings of the previous study that reported the same finding despite the respondents of this study was a combination of teachers among primary and secondary schools while previous studies referred to teachers from the Secondary school teachers (Semerci & Aydın, 2018), and Primary school teachers (Díaz-Barahona et al., 2018). The findings of this study, on the other hand, will help teachers who are not influenced by gender stereotypes to incorporate PE. This is especially important in PE classes, where male and female teachers must work together to keep up with the emerging developments and instructional techniques that support students. Furthermore, gender should not be a barrier to teachers carrying out their responsibilities in incorporating and applying flipped classroom practices.

5.6. Relationship between physical education teachers' readiness and teaching experience

The willingness and readiness of a teacher in supporting and providing high-quality teaching and learning can be attributed to the teaching experience factor of teaching the teacher himself. The ability of an instructor to support and provide high-quality teaching and learning can be attributed to the teacher's own teaching experience. A teacher's teaching experience over a period of time encourages him or her to gain adequate expertise, which is a determinant of the success of a teacher's teaching as well as the learning gained by students. However, the findings of previous studies revealed an unbalanced consistency in the study's findings. The feasibility of the flipped classroom approach has been described based on criteria such as teaching experience and teacher readiness. The findings showed a weak relationship between institutional support factors, teacher beliefs, and teaching strategies. Meanwhile, there is no relationship between technology feasibility factors and teacher teaching experience. According to Hun et al. (2020) and Semerci and Aydın (2018), there is no significant relationship, implying that teaching experience does not influence teacher readiness. Thus, the implementation of teaching using a flipped-classroom approach seeks brought forward in the teaching of PE where the teacher teaching experience does not affect the effectiveness of the teacher's technology self-efficacy, which is an important factor in the integration of technology in education which is required in the flipped classroom approach. Therefore, proactive measures and evaluations of the effectiveness of flipped

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classroom instructional practices in PE subjects should be conducted to determine their effectiveness on student learning outcomes.

Overall, the findings from this study have been able to give new dawn to the problems raised in this study. This study has also provided information in general that PE teachers in Kuala Lumpur are ready for the transformation of national education where male teachers and women are preparing in implementing the integration of technology-based flipped classroom approaches. This is due to the results that indicate that male and female teachers have the same awareness, and teacher technology self-efficacy does not hinder the implementation of the flipped classroom, and period of teaching experiences of teachers' does not impact their readiness to implement a flipped classroom teaching. Furthermore, more research is necessary to explore the facets of teachers' self-supporting awareness of pedagogical technologies and (TPACK) of PE that is focused on the flipped classroom. This is because teacher self-sufficiency is closely related to teachers' willingness to use technology knowledge in teaching pedagogy and learning content of lessons by students. Perfection of PE teaching generally requires extensive study to ensure that teaching and learning take place in two-way and also have an impact on student's achievement.

6. Conclusion

Teacher readiness research in the use of a flipped-classroom approach in teaching generated findings that affirm the use of the flipped classroom and its impact on the teaching and learning processes. Furthermore, the findings lead to PE teachers' perception and readiness for the factors that influence teachers. Knowing the level of teacher readiness encourages the school, the State Education Department, and the Ministry of Education Malaysia to rather more actively advocate the flipped classroom approach among teachers to attract them to use this approach as enshrined in the PPPM 2013-2025. Hence, PE teachers must be trained to withstand the current changes and transformations in the nation's education by investigating educational teaching approaches that incorporate technology (Ambikapathy et al., 2020; Zainuddin & Halili, 2016). This is because technology-based learning has been shown to provide a range of benefits to students, including the ability to emphasize student-centered learning and the use of technology in teaching, such as the flipped classroom approach, to draw students into a more open learning atmosphere (Halili & Sulaiman, 2018). Consequently, the findings of this study include insight to the school about the factors that influence teachers' readiness to use a flipped-classroom approach. In addition, the school should enable PE teachers to use the flipped classroom method in accordance with the country's education philosophy transformation. The study's results are also intended to lead to meaningful ideas and knowledge that can be used as a guide for teachers, particularly PE teachers, and school administrators in recognizing the class approach to the PE subject content. The literature discussed in this article will also demonstrate the significance of the flipped classroom approach, which is thought to have a significant effect on teacher teaching and student learning. Furthermore, future research proposals are presented to serve as a reference and encouraging resource for aspiring researchers with the intent of enhancing PE teachers' teaching.

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Conflict of Interests

The authors declare no conflict of interest in this study.

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