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Assessing the Influence of the Flipped Classroom on Physical Education Students' Engagement in Basketball Learning Activities

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Abstract

Background. The flipped classroom approach has been gaining increasing attention across various educational domains, including physical education. Recent research has underscored the necessity for innovative strategies to enhance student engagement in physical education, particularly in basketball instruction.

Objectives. This study aimed to investigate the influence of the flipped classroom approach on student engagement in Basketball instruction within the Physical Education, Health, and Recreation program at the University level.

Materials and methods. The research method involved an experimental design using the static group comparison approach, where 62 students enrolled in physical education were divided into experimental and control groups. The experimental group received instruction through the flipped classroom approach, while the control group underwent conventional instruction, with the intervention lasting for seven weeks. A comprehensive engagement scale questionnaire was used as the research instrument. Data analysis techniques included descriptive analysis and independent samples t-test.

Results. The research findings revealed significantly higher levels of engagement in the agentic, behavioral, emotional, and cognitive dimensions among students in the flipped classroom group compared to those in the conventional classroom group. This indicates that the flipped classroom approach has a considerable effect on student engagement in basketball instruction.

Conclusions. The study's results have confirmed the effectiveness of the innovative pedagogical strategy of the flipped classroom in fostering meaningful learning experiences and motivating students within the context of physical education.

Keywords: flipped, physical education, student engagement, basketball, learning activities.

Introduction

Higher education increasingly emphasizes the importance of active learning involving students' direct participation in learning (Ribeiro-Silva et al., 2022). One field that presents challenges in achieving optimal student engagement is sports education in physical education programs, where practical experience and direct participation play a crucial role in developing holistic skills. In sports, particularly in basketball education, these challenges become more prominent considering the physical, cognitive, and social aspects that must be considered. Recent research has highlighted the role of technology in changing learning dynamics, with the concept of a "flipped classroom" emerging as an intriguing innovation (McGrath et al., 2017). The flipped classroom reverses the traditional learning approach,

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where students are provided with materials beforehand to study independently, utilizing class time for discussions and application of these concepts (Cheng et al., 2019). In the context of sports education, the flipped classroom promises a more interactive and responsive approach to students' needs (Gallardo-Guerrero et al., 2022).

Sports education in higher education settings presents inevitable challenges in creating meaningful learning experiences that can motivate students. In basketball education, aspects such as developing fundamental physical skills, effective gameplay strategies, and teamwork are the focal points. However, there is often a gap between expectations and reality in achieving student engagement in sports learning activities. Recent research has depicted various factors influencing student engagement, including lack of intrinsic motivation, disinterest in the learning subject, and low levels of active participation in the learning process (Li & Xue, 2023; Tani et al., 2021; Xerri et al., 2018).

The basketball course is part of the curriculum of the physical education, health, and recreation program at the university level. Students often encounter significant challenges in understanding gameplay strategies, learning effectiveness, and teaching techniques related to basketball. Based on teaching experience, such issues frequently arise, including students' difficulties in answering questions and demonstrating adequate practical skills. In such situations, a more effective learning approach is required, considering conventional methods such as lectures and demonstrations can pose challenges for students and instructors.

Over the past few decades, academics and educational researchers have questioned the effectiveness of traditional teaching methods such as lectures and demonstrations. Within the realm of physical education and sports, researchers have sought solutions to increasingly pressing challenges. Research findings indicate that using modern approaches and integrating technology into learning can significantly enhance student engagement (Al-Abdullatif & Gameil, 2021; Maseleno et al., 2018). An interactive and participatory classroom environment allows students to explore and acquire relevant and up-to-date information. Therefore, the learning paradigm must emphasize an approach that places students as the primary subjects actively engaged in the learning process.

Learning involving students demands high levels of critical thinking abilities and skills. The principle of constructivism asserts that instructors do not merely impart knowledge to students passively; instead, students must actively construct their knowledge (Amna Saleem et al., 2021; Makewa, 2019). Within an active learning environment, students are encouraged to participate actively in problem-solving, collaborate with peers, share ideas, and provide feedback (Bergström et al., 2023). Therefore, many educators are currently adopting the flipped classroom concept, which integrates pedagogical approaches and modern technology as an alternative to the traditional instructor-centered approach. The flipped classroom approach enables innovative teaching strategies and pedagogies to facilitate active student engagement and address learning challenges (Elmaadaway, 2018; Steen-Utheim & Foldnes, 2018).

While extensive research has been conducted in the context of physical education and sports, several gaps still need to be addressed. Firstly, most studies focus on conventional teaching methods such as lectures and demonstrations. At the same time, there needs to be more in-depth research on implementing technology and innovative learning approaches, such as the flipped classroom, in physical education, especially in basketball learning. Secondly, there is limited need to specifically explore student engagement in sports education, both in general and considering behavioral, agentic, cognitive, and emotional aspects.

Engagement consists of four distinct yet interconnected aspects: Behavioral, Emotional, Cognitive, and Agentic engagement (O'Donnell et al., 2011; Reeve, 2012). Experts' views vary on student engagement in the classroom, ranging from efforts, consistency, and pro-social behaviors (Behavioral engagement) to high interest and motivation with low levels of anxiety and fatigue (Emotional engagement) to convergence, critical thinking, skilled learning strategies, and self-regulation (Cognitive engagement), as well as deliberate steps taken by institutions to promote individual understanding through learning activities or course materials (Agentic engagement).

Student engagement in the learning process is related to the Self-determination Theory regarding student engagement. The Self-determination Theory posits that intrinsic motivation (motivation originating from within the individual), extrinsic motivation (motivation stemming from external factors), and motivation (lack of motivation) influence individual behavior in achieving goals (Martela, 2020). In the learning context, student engagement in the learning process can be influenced by motivational factors (Uyun et al., 2022). Students who perceive themselves to have control and autonomy in learning (aspects emphasized in the Self-determination Theory) tend to be more actively engaged in the learning process (Huéscar Hernández et al., 2020). Additionally, individuals who feel supported by the learning environment that provides support for basic psychological needs, such as competence, relatedness, and autonomy, also tend to be more engaged in learning (Wang et al., 2019). Thus, the Self-determination Theory perspective can provide a deep understanding of how motivation and learning approaches can be designed to support high motivation and engagement.

This research offers a novel contribution to physical education and sports by bridging existing gaps in the research literature. It expands understanding of the use of instructional technology, particularly the flipped classroom, in sports education, with a specific focus on basketball learning. By integrating this innovative learning approach, the study can potentially enhance student engagement and learning outcomes in the context of sports education. Furthermore, the research underscores the importance of holistically measuring student engagement, encompassing behavioral, agentic, cognitive, and emotional aspects. Thus, the study aims to explore the impact of the flipped classroom approach on student engagement, comprising behavioral, agentic, cognitive, and emotional dimensions, and to assess whether there are differences in the use of classes employing the flipped classroom approach compared to conventional methods (lectures and demonstrations).

Materials and methods

Study participants

The population of this study consists of students enrolled in the physical education, health, and recreation program

at the university level. The research sample comprises students from the physical education, health, and recreation program taking the basketball learning course (invasive game). Sampling was conducted using purposive sampling with 62 students, with 31 students in the experimental group and 31 in the control group. Purposive sampling was chosen because students enrolled in the basketball learning course have direct relevance to the research objectives. The experimental group will receive the flipped classroom treatment, while the control group will undergo learning with the conventional approach (lecture and demonstration).

Study organization

This study employs an experimental approach with the static group comparison design, comprising one experimental group and one control group. This method was chosen to examine the effectiveness of the flipped classroom approach on students' engagement in basketball learning activities. The experimental group will receive the flipped classroom treatment, while the control group will undergo learning with the conventional approach. Comparing these two groups will enable the researchers to evaluate the impact of implementing the flipped classroom on student engagement.

The research begins with administering treatments to the two groups involved in this study: the experimental group receiving the flipped classroom approach and the control group undergoing learning with the conventional approach. The treatment lasts for seven weeks. The experimental group will receive instruction using the flipped classroom approach, where learning materials are provided in advance for independent study by students through provided resources such as videos, readings, research articles, or other interactive learning materials. Class time is then utilized for discussion, collaboration, and applying the concepts learned beforehand. Summaries can be seen in Tables 1 and 2.

Meanwhile, the control group will learn with a conventional approach, where the lecturer delivers lectures and directly demonstrates the learning material in the classroom/field without prior preparation by the students. After a 7-week treatment, both groups will be given a posttest to measure student engagement based on the agentic, behavioral, emotional, and cognitive aspects. The collected data will be analyzed by calculating the mean of each group, namely the mean of the experimental group receiving the

Table 1. Summary of learning program design for weeks 1-3

	Week 1-3			
	Flipped classroom		Conventional Classroom	
	fundamentals of strategy and tactics		fundamentals of strategy and tactics	
	activity	duration	activity	duration
Before class	Man-to-man defense	30'	none	none
	Zone defense	15'		
	Screening	15'		
	Pick and Roll	10'		
	Ball movement	15'		
	Spacing	15'		
	Complex game case studies	30'		
Class activities	Problem-based presentation	50'		
	Problem-solving discussion	50'		
	Evaluation	10'	lectures and demonstrations	

Table 2. Summary of learning program design for weeks 4-7

	Week 4-7			
	Flipped classroom		Conventional classroom	
	Practice applying concepts		Practice applying concepts	
	activity	duration	activity	duration
Before class	Video analysis based on case studies	30'	none	none
	Independent practice of several formations in attack and defense	40'		
	Develop the concept of cooperation skills, skills, and decision making	50'		
Class activities	Application of concepts in the field, peer teaching and peer assessment, evaluation	40' 50' 15'	Lectures with lectures and demonstrations by lecturers	

flipped classroom approach and the mean of the control group undergoing the conventional teaching approach. Comparing these results will provide a deeper understanding of the effectiveness of implementing the flipped classroom in enhancing student engagement in sports education, specifically, in this case, basketball learning.

Research Instrument

The research instrument utilized in this study refers to the adapted Learning Engagement Scale (Reeve & Tseng, 2011). This instrument has been developed and retested for its validity and reliability to suit the research needs and consists of 25 statement items. The first five statements are formulated to assess student behavioral engagement, while the subsequent five questions focus on evaluating student agentic engagement. The following ten questions are designed to evaluate student cognitive engagement, whereas the final five questions aim to assess student emotional engagement. Adaptation of this instrument from a reliable source has been carried out to ensure its suitability and validity within the scope of this research.

Statistical analysis

Data collected in this study were analyzed using descriptive and inferential statistics. Descriptive statistics were employed to present the mean scores of learning engagement across the constructs of agentic, behavioral, emotional, and cognitive engagement. Using descriptive statistics aids in providing a comprehensive overview of the distribution and characteristics of the collected data. Furthermore, to determine whether there were differences in the mean scores of engagement between flipped classrooms and conventional classes, an Independent Samples t-test was utilized. This test allows for the statistically significant comparison of means or averages between two different sample groups. The results of this test will provide a deeper understanding of the effectiveness of each teaching approach in influencing the level of student engagement. The SPSS 22 application package was used to process the data.

Results

This study adopts a comprehensive approach to address key research questions regarding the influence of the flipped classroom approach on student engagement across four key dimensions: agentic, behavioral, emotional, and cognitive. With careful and objective analysis, a comparison is made between the flipped classroom approach and conventional methods such as lectures and demonstrations. This research's findings significantly contribute to enriching understanding of the effectiveness of this instructional approach in enhancing student engagement.

Table 3 indicates that the average scores for each statement regarding the agentic aspect range from 2.94 to 3.45. The highest score is obtained for statement A1, indicating that students actively ask questions during the learning process, with an average score of 3.45. This suggests that the flipped classroom approach encourages students to participate more proactively and interact during the learning sessions. On the other hand, statement A4 has the lowest average score of 2.94, indicating that students are slightly less active in voicing their preferences and views during basketball learning. Nevertheless, overall, the results indicate that the flipped classroom approach positively impacts the agentic aspect of students in the context of basketball learning.

Table 3. The mean aspect of agentic engagement

Description	Mean
A1. During the learning sessions, I actively engage in asking questions.	3.45
A2. I communicate my preferences to the instructor, including things I like and dislike	3.23
A3. I communicate my interests to the instructor.	3.10
A4. During the basketball learning session, I voice my preferences and opinions.	2.94
A5. I provide feedback to improve the quality of basketball learning.	3.06

Table 4 shows the average scores for each statement regarding the behavioral aspect, ranging from 3.03 to 3.32. The most prominent behavior is "When the instructor begins discussing a new topic, I carefully listen to the explanation," with an average score of 3.32. This indicates that the flipped classroom approach can encourage students to follow the presented material actively, demonstrating a high level of precision in understanding new topics. On the other hand, the statement "I am very dedicated when starting something new in the learning process in class" obtained the lowest score, which is 3.03. This suggests that there is still potential to improve students' dedication levels when facing new challenges in learning. Overall, these results indicate that the flipped classroom approach positively impacts students' behavior, enhancing their precision and engagement in the basketball learning process.

Table 4. The mean aspect of behavioral engagement

Description	Mean
B1. I actively listen attentively during the learning process	3.13
B2. I make a sincere effort to complete tasks in the campus environment	3.16
B3. When the instructor begins discussing a new topic, I carefully listen to the explanation	3.32
B4. I am very dedicated when starting something new in the learning process in class	3.03
B5. I always pay close attention during the basketball learning process	3.16

The table 5 shows the average scores for each statement regarding the emotional aspect, ranging from 3.19 to 3.68. The most prominent statement is "When engaged in basketball learning activities, I feel interested and actively involved in the tasks or discussions provided," with an average score of 3.68. This indicates that the flipped classroom approach can create an engaging learning atmosphere and spark students' interest in learning activities. Additionally, the statement "Basketball learning class is delightful and inspiring" also received a high score of 3.61, indicating that students

perceive the learning experience positively and motivating. However, "I feel enthusiastic and excited when introduced to new concepts or materials in basketball learning" obtained the lowest score of 3.19, indicating that there is still room to improve students' enthusiasm and excitement. These results suggest that the flipped classroom approach positively impacts students' emotional aspects, creating a fun, inspiring learning environment and arousing interest and enthusiasm in basketball learning.

Table 5. The mean aspect of emotional engagement

Description	Mean
E1. I feel enthusiastic and excited when introduced to new concepts or materials in basketball learning	3.19
E2. I am interested and actively involved in the tasks or discussions provided when engaged in basketball learning activities	3.68
E3. While in class, I feel curious and eager to know more about the topics or materials being learned, so I often seek additional information	3.29
E4. I enjoy the atmosphere created in the class	3.35
E5. The basketball learning class is delightful and inspiring	3.61

Table 6 displays the average scores for each statement regarding the cognitive aspect, ranging from 2.99 to 3.81. Special attention is given to the statement, "I strive to organize all different ideas into a logical whole when I am studying, making it easier for me to understand the material thoroughly," which obtained the highest average score of 3.81. This indicates that the flipped classroom approach encourages students to develop the ability to integrate various concepts and information to gain a comprehensive understanding. However, the statement "To aid my understanding of important concepts, I often create my relevant examples from everyday life" received the lowest average score of 2.99, indicating that there is still room to improve the implementation of learning strategies more relevant to daily life. These results demonstrate that the flipped classroom approach positively impacts students' cognitive aspects by encouraging them to connect new concepts with previous knowledge, use personal experiences to enrich understanding, and develop the ability to organize ideas logically.

The data analysis results in Table 7 reveal a comparison of student engagement across agentic, behavioral, emotional, and cognitive aspects between two learning groups, namely

Table 6. The mean aspect of cognitive engagement

Description	Mean
C1. When completing coursework assignments, I endeavor to connect new concepts I have learned with the knowledge I already possess	3.45
C2. Throughout the learning process, I strive to link my study material with my personal experiences to enrich my understanding	3.48
C3. I organize all different ideas into a logical whole when I am studying, making it easier for me to understand the material thoroughly	3.81
C4. I often create relevant examples from everyday life to aid my understanding of important concepts	2.99
C5. Before I begin studying, I create a plan and consider the goals I want to achieve to focus and be efficient in the learning process	3.58
C6. When working on assignments, I regularly evaluate my progress by pausing and reviewing my previous accomplishments	3.42
C7. Throughout the learning process, I always assess the extent of my understanding of the material, not just focusing on the correctness of the answers I obtain	3.03
C8. If I struggle to understand the material, I try various learning approaches or strategies to enhance my comprehension.	3.42
C9. I actively seek additional reference sources to support my understanding of the material being studied.	3.53
C10. When facing challenges in comprehension, I am quick to ask classmates for assistance or seek help from the instructor to clarify concepts I need help understanding.	3.42

flipped classroom and conventional. Regarding the agentic aspect, the mean student engagement in the flipped classroom group (M = 3.15, SD = 0.34) surpasses that of the conventional group (M = 2.94, SD = 0.24). Similarly, concerning the behavioral aspect, student engagement within the flipped classroom group (M = 3.18, SD = 0.16) exhibits a higher figure than the conventional group (M = 3.08, SD = 0.17). Furthermore, in the emotional aspect, students in the flipped classroom group (M = 3.42, SD = 0.27) also demonstrate a higher engagement level than the conventional group (M = 3.04, SD = 0.25). Lastly, in

Table 7. Group Statistic

Item	Grup	N	Mean	SD	Levene's test	t	Sig (2 tailed)
Agentic	Flipped classroom	31	3.15	0.34	0.076	2.786	0.007
	Conventional classroom	31	2.94	0.24			
Behavioral	Flipped Classroom	31	3.18	0.16	0.554	2.218	0.03
	Conventional Classroom	31	3.08	0.17			
Emotional	Flipped Classroom	31	3.42	0.27	0.468	5.667	0.000
	Conventional Classroom	31	3.04	0.25			
Cognitive	Flipped Classroom	31	3.39	0.23	0.064	3.864	0.000
	Conventional Classroom	31	3.19	0.15			

the cognitive aspect, student engagement within the flipped classroom group (M = 3.39, SD = 0.23) also outperforms that of the conventional group (M = 3.19, SD = 0.15). From these findings, the flipped classroom approach positively contributes to student engagement across various learning aspects, encompassing agentic, behavioral, emotional, and cognitive dimensions.

Levene's test results indicate that for the agentic aspect, Levene's test value is 0.076, with a t-value of 2.786 and a two-tailed significance value (Sig) of 0.007. This suggests that the data variance between the flipped classroom and conventional groups is homogeneous. Conversely, Levene's test value is 0.554 for the behavioral aspect, with a t-value of 2.218 and a two-tailed Sig of 0.03. These results show a significant difference in the mean behavioral engagement between the two groups. Furthermore, in the emotional aspect, Levene's test value is 0.468 with a t-value of 5.667 and a two-tailed Sig of 0.000. These findings indicate a significant difference between the flipped classroom and conventional groups regarding emotional engagement. Lastly, Levene's test value is 0.064 for the cognitive aspect, with a t-value of 3.864 and a two-tailed Sig of 0.000. This confirms a significant difference between the two groups in cognitive engagement. Thus, these findings provide evidence that the flipped classroom approach significantly impacts student engagement in agentic, behavioral, emotional, and cognitive aspects compared to the conventional classroom approach.

Discussion

The research analysis reveals significant findings regarding the influence of the flipped classroom approach on student engagement across various aspects of learning involvement. In the agentic aspect, students undergoing instruction via the flipped classroom approach exhibit a higher engagement level than those following conventional methods. This is evident from higher average scores on statements indicating proactive activities during participation and interaction throughout the learning sessions. These results align with previous literature emphasizing the importance of active participation in enhancing learning outcomes (González et al., 2021). Students actively engaged in classroom discussions and collaborative projects tend to achieve higher levels of understanding and academic outcomes compared to those merely acting as passive listeners in the learning process (González et al., 2021). Mahasiswa yang secara aktif terlibat dalam diskusi kelas dan proyek kolaboratif cenderung mencapai tingkat pemahaman yang lebih tinggi dan hasil akademis yang lebih baik daripada mereka yang hanya menjadi pendengar pasif dalam proses pembelajaran (Amerstorfer & Freiin von Münster-Kistner, 2021; Cavinato et al., 2021; Digout & Samra, 2023). Thus, this research underscores the significance of active participation in enhancing student learning outcomes.

In the behavioral aspect, students within the flipped classroom group also demonstrate a higher level of engagement, particularly in comprehending new material and exhibiting dedication in facing learning challenges. This indicates that the flipped classroom approach can stimulate more proactive and goal-oriented behaviors in learning. This is consistent with constructivist learning theory, which emphasizes the importance of student-centered learning and active methods in the learning process (Efgivia et al., 2021). Using the flipped classroom approach in university settings has the potential to develop various aspects of student behavior (Han, 2022). In this context, students can prepare themselves beforehand with the provided materials before class meetings. This aids them in feeling more prepared and confident when participating in class discussions. Additionally, the flipped classroom approach encourages active learning, wherein students are more directly involved in the learning process through discussions, problem-solving, and collaboration with fellow students. Through this increased level of interaction, students can develop communication skills, cooperation, and problem-solving abilities, all of which are crucial aspects of the behavioral development of students in university environments (Salleh, 2022a).

The utilization of the flipped classroom holds the potential to enrich various aspects of student behavior within university environments. By fostering active engagement in high-level tasks, this approach stimulates students' involvement in complex problem-solving, in-depth analysis, and synthesis of information necessary to achieve profound understanding. Furthermore, the flipped classroom can influence students' perceptions of learning by considering individual characteristics, learning preferences, and interactions within the learning environment (Salleh, 2022b). These factors can affect enjoyment, boredom, and perceived self-efficacy in facing academic tasks. By acknowledging and adapting learning experiences to meet the needs and preferences of individual students, the flipped classroom can serve as an effective tool for developing diverse student behaviors at the university level (Cho et al., 2021).

The results indicate that the flipped classroom approach positively impacts students' emotions. They feel more interested, motivated, and enthusiastic about participating in learning activities. This suggests that the flipped classroom approach's more interactive and responsive learning atmosphere can enhance students' emotional engagement. Consistent with research findings, the flipped classroom approach shows a positive correlation with increased confidence, motivation, and student engagement in the learning process (Hu et al., 2022; Xiu & Thompson, 2020; Zarouk et al., 2020). They allow students to have access to learning materials before class sessions and allow them to feel more confident in understanding the concepts taught. Thus, the flipped classroom approach correlates with increased comprehension of the material and enhancements in psychological and motivational factors crucial for academic success (Awidi & Paynter, 2019).

In the cognitive aspect, students engaged in the flipped classroom group demonstrate higher involvement. They tend to comprehend the material comprehensively, connect new concepts with previous knowledge, and utilize personal experiences to enrich their understanding. These findings align with research indicating that the flipped classroom approach can stimulate critical and reflective thinking among students in the learning process (Moon, 2023; Orhan, 2023). By encouraging students to engage in deeper thinking about the material, connect the taught concepts with existing knowledge, and relate them to personal experiences, this approach aids in developing higher-order thinking skills and a deeper understanding of the learning material. This reflects

the positive contribution of the flipped classroom approach to the cognitive development of students in challenging and student-centered learning contexts.

The implications of these findings suggest that the flipped classroom approach can be considered an effective alternative for enhancing student engagement in the learning process. Practical implications include educational practitioners adopting this approach to create more meaningful and interactive learning experiences. Additionally, these findings contribute theoretically to expanding understanding of the effectiveness of various teaching methods in improving student learning outcomes.

It is important to remember that this research has limitations that should be acknowledged. Using a limited sample may restrict the generalization of the research findings to a broader population. With relatively small participant numbers in each group, the possibility of significant individual variations in response to specific teaching approaches may need to be fully reflected. Furthermore, specific learning environments, such as basketball learning, may also limit the generalizability of these findings to other learning contexts. Using research instruments that may be partially valid or reliable could affect the accuracy of measuring student engagement. Although adapted from reliable instruments, there is a possibility that the questions in the learning engagement scale need to reflect the intended constructs entirely accurately. Moreover, the subjective nature of students' self-assessment of their engagement may also influence the results.

Furthermore, the research design used has limitations. Although a comparison has been made between two groups, namely the flipped classroom and conventional approaches, there needs to be precise control over variables that may influence student engagement apart from the implemented teaching approach. This could result in uncontrolled confounding variables affecting the research outcomes. The limited research time can also be a constraint. Not all aspects of student engagement may be thoroughly explored within a limited time.

Conclusions

In conclusion, this research demonstrates that the flipped classroom approach significantly impacts student engagement across various learning aspects, including agentic, behavioral, emotional, and cognitive dimensions. These findings indicate that the flipped classroom approach stimulates more proactive and goal-oriented engagement in learning, enhances comprehensive understanding of the material, and encourages the utilization of higher-order cognitive skills by students. Students actively involved in learning, whether through interaction with instructors or peers, tend to achieve better learning outcomes. Therefore, approaches emphasizing active participation, such as the flipped classroom, can be considered effective alternatives for enhancing learning outcomes.

The flipped classroom approach offers significant potential for improving student engagement and learning outcomes. However, adjustments need to be made to implement it effectively according to specific learning needs and contexts. Thus, further research and exploration of this approach would be valuable steps in developing more effective and inclusive sports education in the future.

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Conflict of interest

The authors declare there is no conflict of interest.

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Оцінка впливу застосування методу «перевернутого класу» на залученість студентів з фізичного виховання до навчальної діяльності з баскетболу

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Реферат. Стаття: 9 с., 7 табл., 36 джерел.

Історія питання. Метод навчання за принципом «перевернутого класу» привертає дедалі більше уваги в різних освітніх галузях, зокрема й у фізичному вихованні. Нещодавні дослідження підкреслюють необхідність впровадження інноваційних стратегій щодо підвищення залученості студентів до фізичного виховання, зокрема, до навчання баскетболу.

Мета дослідження. Метою цього дослідження було вивчення впливу застосування методу «перевернутого класу» на рівень залученості студентів до занять баскетболом в рамках програми «Фізичне виховання, здоров'я та рекреація» на університетському рівні.

Матеріали та методи. Дослідницький метод передбачав проведення експерименту з використанням підходу статичного групового порівняльного аналізу, у якому 62 студенти, які навчаються на факультеті фізичного виховання, були розділені на експериментальну та контрольну групи. Експериментальна група проходила навчання за технологією «перевернутого класу», тоді як контрольна група навчалася за традиційною методикою із проведенням інтервенції впродовж семи тижнів. В якості інструменту дослідження використовувався комплексний опитувальник за шкалою залученості. Методи аналізу даних включали описовий аналіз та t-критерій незалежних вибірок.

Результати. Результати дослідження показали значно вищі показники залученості в діяльнісному, поведінковому, емоційному та когнітивному вимірах серед студентів у групі із застосуванням моделі «перевернутого класу» порівняно з групою зі звичайною методикою навчання. Це свідчить про суттєвий вплив методу «перевернутого класу» на рівень залученості студентів до навчання баскетболу.

Висновки. Результати дослідження підтверджують ефективність впровадження інноваційної педагогічної стратегії «перевернутого класу» у стимулюванні процесу осмисленого навчання та мотивації студентів у контексті фізичного виховання.

Ключові слова: перевернутий, фізичне виховання, залученість студентів, баскетбол, навчальні заходи.

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