



Effect of Teaching Personal and Social Responsibility (TPSR) and Teaching Games for Understanding (TGfU) Models with Self-Efficacy on Learning Outcomes of Physical Education, Sports, and Health

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

This research aims to determine the differences in the effects of the Teaching Personal and Social Responsibility (TPSR) model and the Teaching Games for Understanding (TGfU) model on self-efficacy and learning outcomes in Physical Education and Health. The research utilizes an experimental method with a 2x2 factorial research design. The research sample consists of X, XI, and XII grade students from UPT SMA Negeri 4 Parepare. The learning material during the

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experiment focuses on Volleyball Game. Data collection for this research employs questionnaires and tests. The data analysis technique used in this research is a two-way analysis of variance (ANOVA) at the significance level of $\alpha = 0.05$ and $\alpha = 0.01$. The results of the research indicate that: (1) The group of students taught using the TGfU teaching model has a higher average score compared to the group of students taught using the TPSR model, (2) There is no interaction between the self-efficacy variable and learning outcomes or the teaching model, and (3) There is a significant difference in the average scores of student learning outcomes between those taught using the TGfU model and the TPSR model.

Keywords: Teaching personal and social responsibility (TPSR) model; teaching games for understanding (TGfU); self-efficacy; learning outcomes.

1. INTRODUCTION

Education is one of the essential factors in creating quality resources, intelligence, competitiveness, and improving the well-being of Indonesian citizens. Through education, individuals can acquire valuable knowledge to develop their potential [1-6]. This aligns with the National Education System Law No. 20 Article 1 Paragraph 1 (2003), which states, "Education is a conscious and planned effort to create a learning atmosphere and learning process so that learners actively develop their potential to possess spiritual and religious strength, self-control, personality, intelligence, noble character, and the skills needed for themselves, society, nation, and state."

Physical education is an integral part of education as a whole, as defined in the previous understanding of education [7-9]. Therefore, physical education aims to develop aspects of physical fitness, movement skills, critical thinking skills, social skills, reasoning, emotional stability, moral actions, healthy lifestyles, and awareness of a clean environment through selected physical activities that are systematically planned to achieve educational goals (Eliwatis et al., 2022). In line with the aforementioned educational goals, Johnson and Turner [10] state that Physical Education is an educational process that utilizes physical activities, healthy lifestyles, and the integration of character implemented in everyday life.

Physical education is a field of study/subject that is included in the curriculum and taught in schools, starting from the Elementary School (SD) level up to the Senior High School (SMA) and even in higher education [11-15]. The content of physical education is divided into two groups: core content and elective content. Core content refers to mandatory subjects taught based on the applicable curriculum. Elective content, on the other hand, consists of sports

activities outside of regular school hours, such as extracurricular sports activities. In the Merdeka Curriculum, by studying physical education, sports, and health at the primary and secondary education levels, learners can: 1. develop an awareness of the importance of physical activity for individual growth and development, as well as an active lifestyle throughout life. 2. develop knowledge and self-management skills to enhance and maintain physical fitness, personal well-being, and healthy behavior patterns. 3. develop fundamental movement patterns and motor skills guided by the application of concepts, principles, strategies, and tactics in general. 4. establish a strong moral foundation through the internalization of values such as self-confidence, sportsmanship, honesty, discipline, responsibility, teamwork, self-control, leadership, and democratic participation in physical activities. 5. create a recreational environment that promotes joy, social interaction, challenges, and self-expression. 6. develop the profile of a Pancasila student who is faithful and devoted to the One Almighty God, creative, cooperative, globally tolerant, critical thinking, and independent through physical activities (Wae, 2023).

The aim of physical education is not only limited to physical achievements but also to develop a well-rounded personality, encompassing physical, mental, emotional, intellectual, social, moral, and aesthetic aspects. Additionally, the positive influence of physical education is expected to support the ideal development of students in their affective, cognitive, and psychomotor domains.

Furthermore, (Darsi, 2022) states that physical education can serve as a catalyst for moral growth and psychosocial development. This is reflected in Ministerial Regulation No. 22 of 2006 on Content Standards, which emphasizes that Physical Education, Sports, and Health are

means to encourage physical growth, psychological development, motor skills, knowledge and reasoning, appreciation of values (Attitude-Mental-Emotional-Sports-manship-Spiritual- Social), as well as the habituation of a healthy lifestyle, all of which contribute to stimulating balanced physical and psychological quality growth and development.

The main issue in physical education in Indonesia currently is the ineffectiveness of physical education instruction in schools, starting from elementary to secondary levels [16-18]. The worrisome quality of physical education instruction is attributed to several factors, including the limited capabilities of physical education teachers and the limited resources used to support the teaching process of physical education, such as facilities, equipment, and instructional media for teaching physical education to children [19]; (Toho Cholikh Mutohir, 2019).

Another issue is the inadequate quality of physical education teachers in secondary schools. This is due to the teaching methods and styles employed by teachers in physical education practices that are still lacking in variation and tend to be teacher-centered, where students perform physical exercises or movement activities based on instructions given by the teacher [20,21]; (Hamdayama, J, 2022). In physical education instruction, some utilize conventional methods and demonstration methods, where the demonstration method fails to stimulate students to explore the material being taught. This condition results in the suboptimal function of physical education instruction as an educational medium for the holistic development of children, which does not align with the characteristics of elementary school-aged children who generally have a tendency to enjoy playing. This aligns with the findings in the Academic Script of Physical Education and Health (2007), which state that: "It solely focuses on motor behavior, neglecting cognitive-reflective, socio-motor, and affective elements within its scope. It is oriented towards a curriculum model that emphasizes the mastery of basic techniques and sports skills. In terms of implementation, several issues can be identified, such as the lack of enrichment in approaches, styles, methods, models, and teaching strategies. The learning process is no longer nurturing, and the teaching tasks are no longer based on Developmentally Appropriate Practices (DAP)."

Physical education (abbreviated as *penjas*) learning aims to develop and provide opportunities for students to actively engage in the learning process, encompassing cognitive, affective, and psychomotor aspects. Physical education is a learning process that involves various elements of knowledge about various values and diverse skills. Problems that occur in society and among students, one of which is the prevalence of juvenile delinquency, can be attributed to the approach of dichotomy that separates the physical and spiritual aspects [22-24]. Nasrun (2022) states, "This empirical view of human dichotomy leads to misconceptions in formulating the objectives, implementation programs, and assessment of physical education." The reality in the field still shows that physical education implementation tends to focus on strengthening the body, improving physical skills, and physical abilities alone. Therefore, it can be said that physical education learning has not been successful in realizing holistic education.

To address the issues in physical education, which is often ineffective and solely focused on the psychomotor aspect while neglecting the development of the affective and cognitive domains [25-27], it is deemed necessary to create an educational and engaging learning environment for physical education. This environment should holistically develop the affective, cognitive, and psychomotor aspects of students, aiming to optimize students' learning interests in line with the intended objectives.

In physical education, there is a specific instructional model that can be used to develop personal responsibility, interaction, and social behavior change. This model is called Teaching Personal and Social Responsibility (TPSR). The model has specific goals that emphasize the development of students' personal and social responsibility. The instructional approach is more student-centered, focusing on self-actualization and social reconstruction.

Model Teaching Personal and Social Responsibility (TPSR) was developed by Hellison [28] as an alternative approach to physical activity programs with the goal of teaching personal and social responsibility to students who are often exposed to social risk situations such as poverty, violence, substance abuse, and family issues. The TPSR model has been implemented in various elementary and secondary classrooms, and in different contexts,

including physical education classes as part of the academic curriculum and in sports outside of school and extended-day programs [29].

The TPSR-based program suggests five levels of responsibility as follows: (1) respecting the rights and feelings of others; (2) effort and cooperation; (3) self-direction; (4) helping others and leadership; and (5) transfer outside the gym [30]. These five levels have the following objectives: The objective of the first level is for students to learn empathy, self-control, and the ability to resolve conflicts peacefully. The objective of the second level is to develop intrinsic motivation and interest in completing tasks well. At the third level, students are encouraged to manage their time, plan their own learning, and set short-term and long-term goals for themselves. The fourth level teaches students to assist others and be sensitive and responsive. At the fifth level, students are encouraged to apply their learning in different contexts (Nopembri, S, 2022).

In order to achieve the aforementioned levels, the TPSR learning model employs the following strategies: 1) Counseling time, which provides students with an opportunity to seek guidance when facing difficulties. 2) Awareness talk, which serves as a reminder to students about their responsibilities. 3) The Lesson, which integrates the levels of responsibility into physical education instruction. 4) Group meeting, a brief gathering towards the end of the class where students can express their thoughts on how the class is progressing and suggest improvements. 5) Reflection time, concluding the class by engaging students in personal and social evaluation of their responsibilities for the day [31].

The TPSR model is an effective teaching tool that assists teachers in structuring their classes and promoting responsible learning among students. This indicates that TPSR can effectively enhance the psychological and social development of at-risk students, and that physical education classes can serve as suitable arenas for this approach. Additionally, TPSR serves as a character development strategy that not only contributes to the improvement of student responsibility but also creates an effective and conducive learning environment.

Furthermore, this study examines the enhancement of self-efficacy after implementing the Teaching Games for Understanding (TGfU) model as a treatment. The TGfU model serves

as a comparative model to ensure the obtained results. The Teaching Games for Understanding (TGfU) was first introduced in 1982 by David Bunker and Rod Thorpe [32] at Loughborough University in England [33,34]. TGfU is a learner-centered approach that focuses on using games to teach physical education and sports, applicable in both school settings and extracurricular sports settings [35] (Gincience et al., 2023).

In TGFU learning, six steps are followed as suggested by Bunker and Thorpe in 1982, which include: (1) Game, (2) Game Appreciation, (3) Tactical Awareness, (4) Making Appropriate Decisions, (5) Skill Execution, and (6) Performance (Moh. Fakhori et al., 2021). Besides the two aforementioned models of physical education learning, another crucial aspect that teachers should consider in the teaching and learning process is Self-Efficacy. According to Bandura [35], Self-Efficacy is the belief that influences the actions individuals choose to take, their efforts to persist in the face of obstacles and failures, and their resilience when encountering setbacks.

According to Bandura (Samsir, 2022), Self-Efficacy is built upon four main sources: 1) mastery experiences. Successfully mastering a task or skill builds strong self-efficacy beliefs. 2) social modeling. Self-efficacy increases when we observe others who have similar competencies achieving success. 3) social persuasion. Words of persuasion from others can enhance or diminish self-efficacy. 4) physiological and emotional states. Individual physiological and emotional states play a role in assessing strengths, weaknesses, characteristics, vulnerability, and functional disturbances (particularly related to physical conditions).

Physical education has been an integral part of the curriculum for over 100 years. Although the focus has changed over the past century, the main goal remains relatively constant, which is to provide individuals with knowledge, skills, abilities, attitudes, and self-confidence (Sallis et al., 2018). The primary objective of various forms of physical education activities is not only the development of the psychomotor domain but also holistic education that encompasses character, moral, cognitive, mental, spiritual, social, and psychomotor development. Therefore, to achieve the comprehensive goals of physical education, the role of a teacher is crucial in determining and implementing the appropriate and student-

centered learning models. Hence, the researcher has chosen the Teaching Personal and Social Responsibility (TPSR) and Teaching Games for Understanding (TGfU) models to enhance the self-efficacy and learning outcomes of students at UPT SMA Negeri 4 Parepare. The researcher found that some students still have low self-confidence, which is a particular concern for the researcher as a physical education teacher. For example, it was observed that a student lacked enthusiasm in practicing the taught material because they perceived themselves as incapable or unable to perform the tasks. Furthermore, some students felt less confident or shy to engage in physical activities. Another issue identified was the lack of enthusiasm and seriousness in students' behavior during the learning process. Some students showed a lack of attention to the teacher's instructions and engaged in conversations with their peers instead. Teachers are expected to present learning materials in effective and efficient instructional media that align with the curriculum's characteristics and requirements, in order to engage students in the learning process. Through the exploration of various journals, the researcher discovered that Self-Efficacy can contribute to improving students' learning outcomes by implementing intervention models such as Teaching Personal and Social Responsibility (TPSR) and Teaching Games for Understanding (TGfU).

Based on this phenomenon, it became an empirical study for the author as a physical education, sports, and health teacher at UPT SMA Negeri 4 Parepare in the academic year 2022/2023. Observation of the twelfth-grade students revealed concerning levels of Self-Efficacy and learning outcomes in physical education. This is due to several factors, including the limited ability of students to comprehend the substance of physical education and sports, as they are distinct subjects, leading students to appear reliant on instructions. Another factor is the emergence of a lack of self-confidence among some students when faced with instructional materials that require personal application. These instructional materials are within the scope of Physical Education, Sports, and Health.

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twelfth-grade students indicate concerning levels of Self-Efficacy and learning outcomes in physical education. This is caused by several factors, including the limited ability of students to comprehend the substance of physical education and sports, despite their distinct differences, leading students to appear reliant on instructions. Another factor is the emergence of a lack of self-confidence among some students when faced with instructional materials that require personal application. These instructional materials are within the scope of Physical Education, Sports, and Health.

In addition to the TPSR approach, another instructional model that can demonstrate proper and effective movement processes in line with curriculum demands is Teaching Games for Understanding (TGfU). Physical education instruction using the TGfU approach can be used as an effort to ensure that students are enthusiastic and actively participate in physical education classes. TGfU in physical education focuses on teaching students tactical understanding before addressing skill performance. Thus, TGfU offers a tactical approach to teaching performance in playing skills in physical education lessons. This implies that game-playing experiences are used as a teaching approach for tactical understanding leading to skill acquisition. The tactical approach to instruction emphasizes the role of the physical education teacher as a facilitator and the role of students as active and engaged participants in the learning process. The TGfU approach is a tactical approach to games that is easily understood. As an initial introduction, students need to understand why and when a skill is necessary in the context of the game and how to execute the technical aspects of playing skills.

The TGfU model has the potential to: (1) facilitate the development of technical skills and tactical knowledge; (2) empower children to learn independently and take responsibility; (3) assess tactical transfer across games; and (4) enhance enjoyment and pleasure in playing games (Wang & Ha, 2013). Based on the research conducted by Yudha, Artanayasa, & Snyanawati (2017), the TGfU instructional model has a significant influence on improving students' basic passing control skills in soccer. This instructional model can be considered as an alternative approach to teaching. Additionally, the research findings by Nathan (2017) indicate that TGfU is a useful approach for enhancing the intensity and cardiac output in game play.

Based on the aforementioned background, this research aims to determine whether there is a difference in the mean scores of student learning outcomes between those taught using the TGfU model and the TPSR model.

2. METHODOLOGY

This research utilizes an unstructured quasi-experimental research design, where the researcher does not have full control over the independent variables or the allocation of research subjects into treatment groups. This type of research is often conducted in real-world contexts where the researcher cannot control external factors that may influence the study. Instead, the researcher employs an observational approach to study the effects of the treatment on non-experimentally controlled groups. The research was conducted at UPT SMA Negeri 4 Parepare, during the planned period from September to November 2022. The research design used is a 2x2 factorial design, which is a research design used to examine the influence of two or more independent variables on a dependent variable. The first independent variable is the Teaching Model (TPSR and TGfU), the second independent variable is Self-Efficacy (SE), and the dependent variable is the learning outcomes in Physical Education and Health (PJOK).

The population used in this study consists of all students of UPT SMA Negeri 4 Parepare in

grade X, grade XI, and grade XII for the academic year 2022/2023. The research sample was selected from this population, consisting of 60 students (30 students in each group), adjusted to the specific content or Basic Competencies that will be taught during the experiment. The content taught during the experiment is Volleyball Game.

Data collection in this research involves the use of questionnaires and tests. The questionnaire is used to gather information about the level of Self-Efficacy possessed by the students, while the tests are used to measure the students' learning outcomes before and after the implementation of the TPSR and TGfU models. The questionnaire consists of 42 items, each item meeting the validity criteria with an instrument reliability level of 0.872. Meanwhile, the learning outcomes test consists of 30 items, with each item also meeting the validity criteria and a reliability level of 0.863. Furthermore, the collected data from the research are analyzed using descriptive statistics and inferential statistics. The obtained data are described according to each variable. Hypothesis testing is conducted using a two-way Analysis of Variance (ANOVA). Prior to the testing, assumptions of normality and homogeneity are examined.

3. RESULTS AND DISCUSSION

Based on the results of processed descriptive statistics, information is obtained as in the following Table 1.

Table 1. Descriptive statistics of TGfU and TPSR learning outcomes

		Learning Result TGfU	Learning Results TPSR
N	Valid	30	30
	Missing	0	0
Mean		166,6333	145,2667
Median		169,0000	143,5000
Mode		169,00 ^a	143,00
Std. Deviation		10,25026	12,62983
Variance		105,068	159,513
Skewness		-,721	,304
Std. Error of Skewness		,427	,427
Kurtosis		,154	-,392
Std. Error of Kurtosis		,833	,833
Range		40,00	48,00
Minimum		144,00	124,00
Maximum		184,00	172,00
Sum		4999,00	4358,00

a. Multiple modes exist. The smallest value is shown

In Table 1, it can be observed that the mean value of students' learning outcomes with the TGfU teaching model is 166.6333. This mean value is higher than the mean value of students' learning outcomes with the TPSR teaching model, which is 145.2667. The median value of students' learning outcomes with the TGfU teaching model is 169.0000, which is also higher than the median value of students' learning outcomes with the TPSR teaching model, which is 143.5000. These results indicate that students' learning outcomes with the TGfU teaching model tend to be higher than students' learning outcomes with the TPSR teaching model in the subject of Physical Education, Sports, and Health.

Furthermore, in the column of student learning outcome statistics with the TGfU teaching model, it can also be observed that the median value is higher than the mean value. This result indicates that more than 50% of students in the TGfU teaching model achieved learning outcomes above the mean value. This finding is supported by the negative skewness value, which suggests that, in general, students obtained learning outcomes above the mean value. Contrasting results can be seen in the column of student learning outcome statistics with the TPSR teaching model. In this column, the median value is smaller than the mean value, indicating that more than 50% of students in the TPSR teaching model achieved learning outcomes below the mean value. Thus, it can be concluded that students' learning outcomes with the TGfU teaching model tend to be better than those with the TPSR teaching model. In other words, teaching with the TGfU model can enhance students' learning outcomes.

The TGfU teaching model can enhance learning outcomes in the context of physical education and sports. TGfU is a learning approach that emphasizes the understanding of game concepts and strategies through well-structured game-playing experiences.

There are several reasons why Teaching Games for Understanding (TGfU) can enhance students' learning outcomes: (1) Deep Conceptual Understanding: TGfU focuses on the understanding of underlying game concepts. In this approach, students not only learn to follow rules, but they understand why the rules exist and how they impact the overall game. This helps students grasp the essence of the game, learn strategies, tactics, and skills related to the

game more effectively. (2) Skill Transfer: In TGfU, students engage in realistic and complex game situations. They face challenges and problems similar to those encountered in actual gameplay. Through these experiences, students can develop skills that can be transferred to different game situations or even to everyday life contexts. They can apply and utilize the skills they have learned in various contexts. (3) Problem-Based Learning: In TGfU, students are presented with problems and tasks within the game that they need to solve. They have to develop strategies, make decisions, and adapt to changing game situations. Problem-based learning like this stimulates critical thinking, problem-solving, and creativity in students. (4) Motivation and Engagement: In TGfU, students are actively involved in the game and have a significant role in the learning process. They have opportunities to play, practice, and experiment with game concepts. This direct involvement enhances students' motivation as they feel in control of their learning and engaged in meaningful and enjoyable activities. (5) Collaboration and Communication: In TGfU-based games, students often interact and collaborate with their classmates. They need to communicate, coordinate, and collaborate to achieve game goals. This develops students' social skills and teamwork abilities.

With the combination of these factors, TGfU can create an active, challenging, and meaningful learning environment for students. This can enhance their understanding of the game, develop relevant skills, and promote better learning outcomes. By adopting the TGfU approach, teachers can create an engaging and effective learning environment for students. This can increase student engagement, facilitate better understanding, and improve their learning outcomes in the context of games and sports.

Furthermore, the interaction testing of the moderating variable of Self-Efficacy on learning outcomes was conducted using Two-Way ANOVA, as shown in the following Table 2.

In Table 2, it can be observed that the Self-Efficacy variable does not have a significant effect on student learning outcomes. This is indicated by the F-value of 3.066 with a significance value of 0.085, which is greater than 0.05. Additionally, it can also be seen that there is no interaction between the Self-Efficacy variable and both learning models. This is indicated by the F-value of 1.232 with a

significance value of 0.272, which is greater than 0.05. Therefore, it can be concluded that the Self-Efficacy variable does not moderate the improvement of student learning outcomes. On the other hand, the learning model has a significant influence on student learning outcomes, with an F-value of 53.816 and a significance value of 0.000, which is smaller than 0.05.

The results indicate that self-efficacy is not the sole factor influencing learning outcomes. There are still many other variables that can contribute to achieving good learning outcomes, such as motivation, learning environment, effective teaching, and so on. Self-efficacy refers to an individual's belief in their ability to succeed in specific tasks or achieve set goals. When someone has a high level of self-efficacy related to learning tasks, they tend to have higher motivation, greater effort, and greater persistence in achieving good results.

Furthermore, self-efficacy can also act as an important moderator in the relationship between other factors and learning outcomes. For example, if someone has a high level of self-efficacy, they may be better able to overcome challenges, exploit available resources, and take advantage of learning opportunities. In this case, self-efficacy can influence the extent to which factors such as social support, learning environment, or learning strategies impact learning outcomes.

Next, a test was conducted to examine the differences in learning outcomes between the group of students taught using the TGfU teaching model and the group taught using the TPSR teaching model, as shown in the following Table 3.

In Table 3, it can be seen that the value of F is 1.339, corresponding to a significance value of 0.252, indicating that both sample groups have

homogeneous variances. Furthermore, the value of T is 7.195, with a significance value of 0.000, which is smaller than 0.05, indicating a significant difference between the mean learning outcomes of students taught using the TGfU teaching model and the TPSR teaching model. The positive value of T indicates that the mean learning outcomes of students taught using the TGfU teaching model are higher than those taught using the TPSR teaching model.

One of the reasons for the difference between the two aforementioned teaching models lies in their focus or emphasis. Here are the fundamental differences between the Teaching Games for Understanding (TGfU) and Teaching Personal and Social Responsibility (TPSR) teaching models:

1. Main Focus:

TGfU: This model focuses on understanding the basic concepts of the game or sport before learning specific technical and tactical skills. Its goal is to develop a deeper understanding of a particular game or sport before delving into specific skills.

TPSR: This model focuses on developing students' personal and social responsibility through physical activities. Its aim is to help students become individuals who are responsible and caring towards themselves and others.

2. Learning Approaches:

TGfU: The TGfU approach involves actively engaging students in games and sports. Students learn through playing and practicing in meaningful game contexts. They develop an understanding of tactics, strategies, and fundamental principles of the game through exploration and reflection.

Table 2. Results of two-way anava analysis

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	7394,983 ^a	3	2464,994	19,372	,000
Intercept	1459224,150	1	1459224,150	11467,595	,000
Modpemb	6848,017	1	6848,017	53,816	,000
SelfEff	390,150	1	390,150	3,066	,085
Modpemb * SelfEff	156,817	1	156,817	1,232	,272
Error	7125,867	56	127,248		
Total	1473745,000	60			
Corrected Total	14520,850	59			

a. R Squared = ,509 (Adjusted R Squared = ,483)

Dependent Variable: Learning outcome.

Table 3. Independent samples test

		Levene's Test for Equality of Variances				t-test for Equality of Means					
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Hasil_Belajar	Equal variances assumed	1,339	,252	7,195	58	,000	21,36667	2,96974	15,42209	27,31124	
	Equal variances not assumed			7,195	55,644	,000	21,36667	2,96974	15,41672	27,31661	

TPSR: The TPSR approach involves teaching personal and social responsibility within the context of physical activities. Students are given opportunities to learn about social values, ethics, and leadership skills through group activities, reflection, and being responsible for specific tasks.

3. Learning Objectives:

TGfU: The primary goal of TGfU is to develop students' strategic and tactical understanding within the context of games or sports. The model aims to produce players who are tactically astute, capable of strategic thinking, and possess a deep understanding of the game.

TPSR: The main objective of TPSR is to develop students' personal and social responsibility through physical activities. The model aims to produce individuals who are responsible, have good social values, and can collaborate effectively within a group.

4. CONCLUSION

Students' learning outcomes tend to be better with the TGfU teaching model compared to the TPSR teaching model. In other words, learning with the TGfU model can enhance students' learning outcomes. The TGfU teaching model can improve learning outcomes in the context of physical education and sports. TGfU is a learning approach that emphasizes understanding game concepts and strategies through well-designed game-playing experiences. There are several reasons why Teaching Games for Understanding (TGfU) can enhance students' learning outcomes: (1) deep conceptual understanding, (2) skill transfer, (3) problem-based learning, (4) motivation and engagement, and (5) collaboration and communication.

Self-efficacy is not the sole factor that influences learning outcomes. There are many other variables that can contribute to achieving good learning outcomes, such as motivation, learning environment, effective teaching, and so on. Self-efficacy refers to an individual's belief in their ability to succeed in specific tasks or achieve set goals. When someone has a high level of self-efficacy related to learning tasks, they tend to have higher motivation, greater effort, and increased perseverance to achieve positive results.

There is a significant difference between the mean learning outcomes of students taught using

the Teaching Games for Understanding (TGfU) instructional model compared to the Teaching Personal and Social Responsibility (TPSR) model. The mean learning outcomes of students taught using the TGfU model are higher than those taught using the TPSR model. The fundamental differences between the TGfU and TPSR instructional models lie in the (1) learning focus, (2) learning approach, and (3) learning objectives.

Based on the above conclusion, it is recommended that in Physical Education, Health, and Sports instruction, teachers should use the TGfU instructional model. However, it is also important to combine other instructional models such as TPSR and pay closer attention to students' self-efficacy. By doing so, the learning outcomes of students in Physical Education, Health, and Sports can be further enhanced.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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