

The Effect of Volleyball Learning Management Using the TPSR Model on Learning Achievement and Responsibility of Student in SIAS University

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Abstract

This study aimed to investigate (1) the effectiveness of integrating the Teaching Personal and Social Responsibility (TPSR) model into college-level volleyball instruction to enhance students' learning achievement and theoretical understanding of the sport; (2) the comparative impact of TPSR-based teaching versus traditional instructional methods on students' skill development and performance; and (3) the extent to which the TPSR model fosters students' personal responsibility, social responsibility, and autonomous learning. The sample consisted of 72 students enrolled in volleyball elective courses at Zhengzhou Sias College during the 2023 academic year. Participants were selected using cluster random sampling and assigned to either an experimental or a control group. Instruments for data collection included adapted responsibility and social accountability scales, skill performance assessments, and standardized physical fitness tests. Data were analyzed using descriptive statistics and content analysis.

The research results were as follows: 1. Compared with traditional teaching models, the TPSR model significantly enhanced students' understanding of volleyball theory, with the experimental group showing a greater improvement in post-test scores.

2. Both groups demonstrated progress in volleyball-specific skills such as serving, passing, and setting. However, the TPSR group exhibited significantly greater gains in physical fitness and technical performance.

3. Students in the TPSR group reported markedly improved levels of personal responsibility, including classroom behavior, cooperation, and respect for others. Their scores in social accountability and problem-solving also increased more substantially than those of the control group.

These findings suggest that implementing the TPSR model in volleyball instruction can support not only technical skill acquisition but also character development, making it a valuable pedagogical approach in physical education at the university level.

Keywords: TPSR model; Volleyball education; Physical education reform; Responsibility development; Student-centered learning.

Introduction

The Teaching Personal and Social Responsibility (TPSR) model provides a thorough approach to addressing these constraints. The acquisition of technical skills and competitive performance have been the main focus of traditional physical education (PE) programs in Chinese universities. Despite its advantages, this method frequently ignores the growth of students' moral, social, and psychological skills. In particular, teacher-centered approaches that restrict student autonomy, engagement, and personal development are commonly used in volleyball courses. Due to this limited focus, students may not take ownership of their education and may not use physical activity as a means of developing critical life skills.

Framework that combines character education with the development of physical skills. The five progressive levels of responsibility that Hellison (2011) developed are respect for others, effort and cooperation, self-direction, leadership and helping others, and the application of these values outside of the gym. By encouraging students to accept accountability for their actions both inside and outside of the physical education classroom, this student-centered approach fosters holistic development.

Empirical research has demonstrated how well the TPSR model fosters students' social and emotional growth in addition to their physical competency. Pan et al. (2019), for instance, showed how TPSR's incorporation into the sport education model greatly improved high school students' sense of responsibility, self-efficacy, and in-game performance. Similarly, it has been

demonstrated that TPSR-based interventions enhance self-efficacy, social and personal responsibility, and especially among adolescents who are struggling academically.

In light of these results, the purpose of this study is to examine how SIAS University's volleyball program uses the TPSR model. The goal of the study is to assess how well the model works to improve students' learning outcomes and cultivate a sense of social and personal responsibility. The study supports ongoing efforts to modernize physical education curricula and encourage holistic student development in higher education by tying skill acquisition to character education.

Research Objectives

1. To evaluate the effectiveness of the TPSR model in improving students' learning outcomes in college-level volleyball instruction.
2. To assess the impact of the TPSR model on students' volleyball performance, including skill execution and physical development, compared to traditional teaching methods.
3. To examine the influence of the TPSR model on students' personal responsibility, social responsibility, and autonomous learning within the context of volleyball education.

Literature Review

1. TPSR Teaching Model and Theoretical Framework

By encouraging students' social values and personal development, Don Hellison's Teaching Personal and Social Responsibility (TPSR) model incorporates character education into physical education. From basic respect to the transfer of responsibility outside of the classroom, Hellison's framework outlines progressive levels of responsibility, giving teachers a methodical way to help students develop self-control, teamwork, and leadership (Hellison, 2011).

Recent research has highlighted how the TPSR model can be used to improve students' character development through physical education. For example, Pan et al. (2019) showed that incorporating TPSR into sport education greatly enhanced the self-efficacy, sport passion, responsibility, and game performance of high school students. In a similar vein, Escartí et al. (2010) found that among adolescents at risk of dropping out of school, TPSR-based interventions enhanced self-efficacy as well as personal and social responsibility.

2. Empirical Applications of TPSR in Physical Education

The efficacy of the TPSR model in diverse educational contexts has been confirmed by empirical research. For instance, when Valero Valenzuela et al. (2020) used the TPSR model in physical education classes for teenagers who were at risk of dropping out of school, they discovered that students' levels of responsibility and self-efficacy had significantly increased. Similar to this, Pan et al. (2019) improved student engagement and responsibility in high school physical education by implementing a hybrid TPSR and sport education program.

Additionally, Raharjo et al. (2023) investigated the use of the TPSR model in physical education classes in elementary schools, emphasizing character development and fundamental manipulative movements. Their results showed that TPSR-based training successfully enhanced students' basic motor skills and character attributes.

3. The Relationship Between Sports, Morality, and Education Reform

Integrating moral education into physical education is consistent with larger educational reforms that aim to develop students holistically. Values like responsibility, respect, and teamwork can be ingrained through physical education. By offering an organized method for teaching social and personal responsibility via exercise, the TPSR model facilitates this integration (Hellison, 2011).

In addition, the TPSR model has been acknowledged for its contribution to the advancement of social and emotional learning (SEL) in physical education settings. In order to address the need for educational practices that promote students' general well-being, TPSR creates an atmosphere that is favorable to moral and ethical development by placing an emphasis on respect, effort, self-direction, and caring (Hellison, 2011).

Conceptual Framework

The study's conceptual framework is organized around the fundamental ideas of the Teaching Personal and Social Responsibility (TPSR) model, which combines moral education with the development of motor skills. The framework makes the assumption that using the TPSR model in volleyball instruction will improve students' academic performance, level of physical fitness, and sense of social and personal responsibility. Important qualities like respect, effort, self-direction, cooperation, and helping others—all of which are progressively developed through organized TPSR-based education—act as mediators for these results.

The intervention is delivered in a volleyball class context, where responsibility is promoted through lesson planning, role modeling, reflection, and real-life application. The study hypothesizes

that TPSR can significantly enhance not only volleyball performance but also psychosocial growth, compared with traditional teaching approaches.

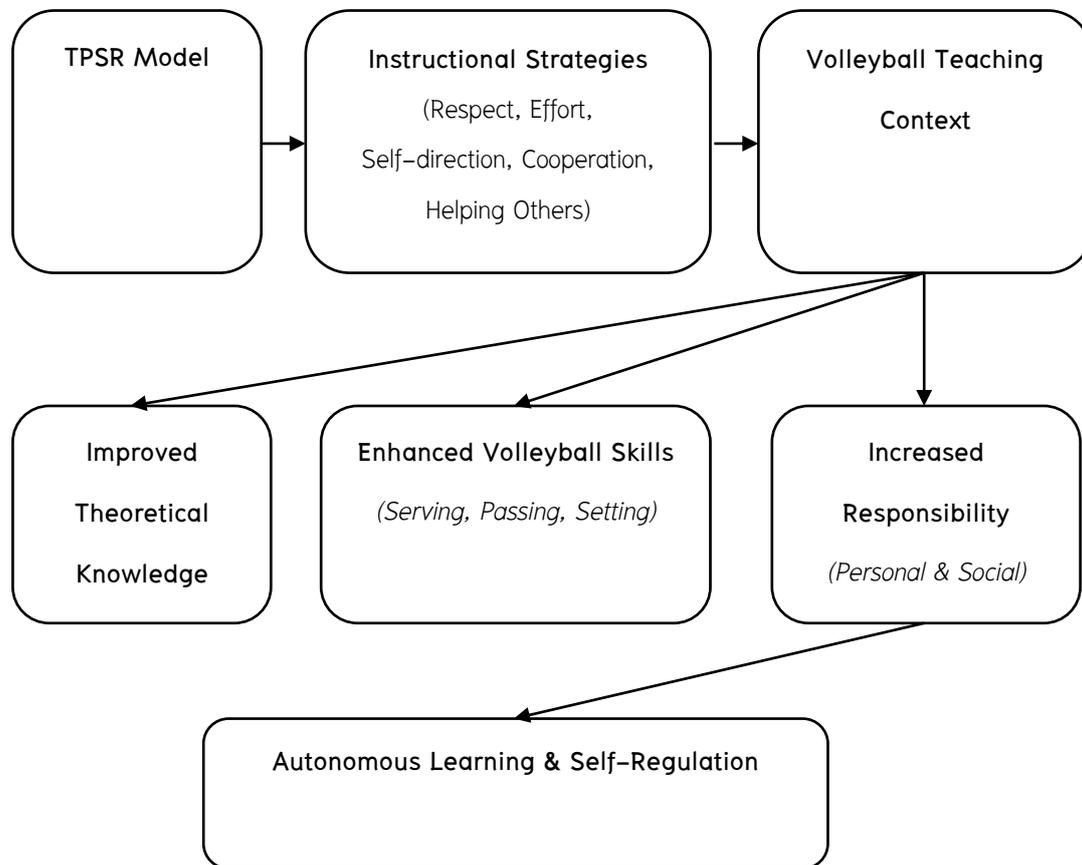


Figure 1 Conceptual Framework

1. Population and Sample

This study employed a cluster random sampling method to select participants from six volleyball elective classes at Zhengzhou Sias College in 2023. Two classes, each consisting of 36 students ($n = 72$), were randomly assigned to either an experimental group or a control group. The experimental group received instruction based on the Teaching Personal and Social Responsibility (TPSR) model, while the control group followed conventional teaching methods. The intervention was conducted over a 16-week period.

2. Research Instruments

Three validated instruments were used to assess the outcomes of the intervention:

Physical Education Student Responsibility Scale, adapted from Hsu and Pan, to assess personal responsibility within volleyball contexts.

Social Responsibility Scale, developed by Gough et al., to measure changes in students' social accountability.

Autonomous Learning Scale, created by Zhu Zude and colleagues, to evaluate students' self-directed learning abilities.

In addition, physical fitness and volleyball-specific performance were evaluated using standardized tests, including the standing long jump, half-meter shuttle run, overhand and underhand serve, passing, and setting drills.

3. Data Collection

Data were collected in three phases: pre-test, mid-term observation, and post-test. Both groups were assessed at the beginning and end of the semester on volleyball knowledge, technical skills, physical fitness, responsibility levels, and autonomous learning. For the experimental group, additional observations and interviews were conducted during the intervention to monitor behavioral changes and engagement consistent with TPSR principles.

4. Data Analysis

SPSS version 20.0 and Excel 2007 were used to analyze the data. Results between the experimental and control groups were compared using independent samples t-tests. To investigate within-group changes from before to after the intervention, paired samples t-tests were utilized. With this method, the efficacy of the TPSR model in improving volleyball skills, responsibility development, and independent learning could be thoroughly assessed.

Research Results

This section compares volleyball knowledge, physical fitness, skill performance, and levels of responsibility and problem-solving ability between and within the experimental and control groups in order to present the study's findings. Pre-experiment group equivalence, within-group changes prior to and following the intervention, and post-experiment group comparisons comprise the three sections of the analysis.

1. Comparative analysis before the experiment

Table 1 Comparison and analysis of volleyball theoretical knowledge, physical fitness, and professional skills between the experimental group and the control group of students prior to the experiment

Project	Experimental Group	Control Group	T	P
	M±SD	M±SD		
Theoretical score	72.5±5.04	73.58±4	-0.825	0.414
Standing long jump	226±16.5	224.17±14.25	0.412	0.682
Half "m" move	22.17±2.57	21.38±2.65	1.051	0.299
Passing (two persons)	6.5±1.18	6.63±1.21	-0.363	0.719
Setting (two persons)	4.71±1.27	4.38±1.1	0.975	0.335
Serve	2.83±1.24	2.25±1.19	1.664	0.103

(P < 0.05* indicates a significant difference)

Table 2 Comparative analysis of the pre-experimental responsibility level, social responsibility, and problem-solving skills between the experimental group and the control group students

Project	Experimental Group	Control Group	T	P
	M±SD	M±SD		
Make great efforts	4.52±0.57	4.54±0.51	-0.133	0.895
Direction	4.52±0.63	4.6±0.6	-0.47	0.641
Follow the classroom routine	4.33±0.45	4.44±0.4	-0.947	0.349
Respect	4.63±0.59	4.57±0.58	0.309	0.759
Cooperate	4.52±0.46	4.35±0.53	1.208	0.233
Help others	4.43±0.54	4.36±0.54	0.454	0.652
Social accountability Score	55.46±6 .11	56.92±4 .89	- 0.913	0 .366
Problem-Solving	83.00±16.51	83.79±15.78	- 0.170	0 .866

(P < 0.05* indicates a significant difference.)

Tables 1 and 2 show no statistically significant differences between the experimental and control groups before the intervention in theoretical knowledge, physical and technical performance, or responsibility-related metrics ($p > 0.05$). This baseline equivalence supports the internal validity of the study and ensures that observed post-test differences are likely attributable to the intervention.

The similarity in initial performance across groups—especially in volleyball theory, standing long jump, and classroom behavior—demonstrates that both groups started from comparable levels in cognitive, physical, and psychosocial domains

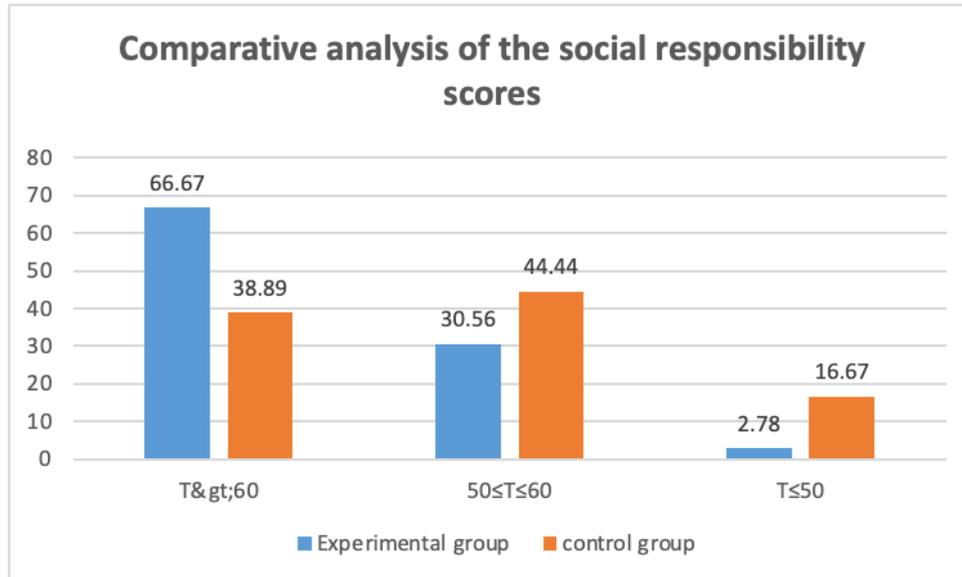


Figure 2 Comparative analysis of the social responsibility scores of the students in the experimental group and the control group before the experiment

Figure 2 present the baseline comparison of psychosocial factors including personal Responsibility, classroom behavior, cooperation, helping others, social accountability, and problem-solving ability. The results show that the differences in mean scores between the experimental and control groups were not statistically significant, with all p-values greater than 0.05. Notably, while the control group showed slightly higher average scores in dimensions such as following classroom rules and social accountability, the variance was not meaningful. This balanced baseline indicates that both groups had similar levels of psychosocial development prior to the intervention, making them suitable for comparative teaching experimentation.

2. Within-Group Comparison Before and After the Experiment

Table 3 Comparative analysis of the volleyball theoretical knowledge, physical fitness, and professional skills of students in the experimental group before and after the experiment

Project	M ± SD Before	M ± SD After	T	P
Theoretical results	72.50±5 .04	77.42±4 .77	- 15.744	<0 .001*
Standing long jump	226±16.5	237.13±16.27	-22.200	<0.001*
Half "m" move	22.17±2.57	26.5±3.11	-11.577	<0.001*
Passing (two persons)	6.5±1.18	10.5±2.23	-11.233	<0.001*
Setting (two persons)	4.71±1.27	8.79±2.28	-11.648	<0.001*
Serve	2.83±1.24	7.5±2.23	-11.229	<0.001*

(P< 0.05* indicates a significant difference.)

Table 4 Comparative analysis of the volleyball theoretical knowledge, physical fitness, and professional skills of the control group students before and after the experiment

Project	M ± SD Before	M ± SD After	T	P
Theoretical score	73.58±3 .99	73.67±4 .07	- 0.464	0 .647
Standing long jump	224.17±14.25	225.58±13.46	-2.496	0.020*
Half "m" move	21.38±2.65	20.96±2.81	1.735	0.096
Passing (two persons)	6.63±1.21	7.29±1.37	-4.290	<0.001*
Setting (two persons)	4.38±1.1	4.79±1.02	-2.846	0.009*
Serve	2.25±1.19	2.54±1.18	-3.077	0.005*

(P< 0.05* indicates a significant difference.)

Table 3 and table 4 the experimental group showed significant improvements across all measured dimensions after the TPSR-based intervention. Theoretical knowledge scores increased, while physical fitness measures such as standing long jump and agility (half-meter shuttle run) improved notably. These outcomes reflect enhanced student engagement and effort—core components of the TPSR model.

In volleyball technical skills, marked progress in passing, setting, and serving skills suggests that the TPSR structure—emphasizing autonomy and accountability—motivated students to take ownership of their practice and learning. These improvements align with the TPSR levels of Effort, Self-Direction, and Transfer.

Table 5 Comparative analysis of the responsibility level, social responsibility, and problem-solving skills of students in the experimental group before and after the experiment

Project	M ± SD Before	M ± SD After	T	P
Make great efforts	4.52±0.57	5.38±0.35	-9.342	<0.001*
Direction	4.52±0.63	5.27±0.62	-5.717	<0.001*
Follow the classroom routine	4.33±0.45	5.36±0.51	-14.175	<0.001*
Respect	4.63±0.59	5.28±0.43	-5.592	<0.001*
Cooperate	4.52±0.46	5.38±0.36	-11.25	<0.001*
Help others	4.43±0.54	5.37±0.61	-9.455	<0.001*
Social accountability score	75.46±6 .11	81.21±2 .13	- 4.711	<0.001*
Problem-Solving	83.00±16.51	89.08±5 .99	- 12.043	<0.001*

(P< 0.05* indicates a significant difference.)

Table 6 Comparative analysis of the responsibility level, social responsibility, and problem-solving skills of control group students before and after the experiment

Project	M ± SD Before	M ± SD After	T	P
Make great efforts	4.54±0.51	4.81±0.66	-3.186	0.004*
Direction	4.6±0.6	4.72±0.58	-1.368	0.185
Follow the classroom Routine	4.44±0.4	4.66±0.68	-1.604	0.122
Respect	4.57±0.58	4.65±0.63	-0.628	0.536
Cooperate	4.35±0.53	4.54±0.54	-1.995	0.058
Help others	4.36±0.54	4.64±0.57	-3.39	0.003*
Social accountability Score	56.92±4 .89	56.50±5 .85	0 .970	0 .342
Problem-Solving	83.79±1 5.78	81.29±1 0.19	0.998	0.329

(P< 0.05* indicates a significant difference.)

Similarly, all responsibility-related dimensions in table 5 and table 6 (e.g., effort, following routines, cooperation, respect, and helping others) increased significantly. These gains demonstrate internalization of TPSR values, especially in the domains of personal and social responsibility. Students also showed increased problem-solving skills, likely due to opportunities for autonomous decision-making in TPSR-designed activities.

In contrast, while the control group displayed minor improvements in select skills, most gains were marginal and inconsistent. Key responsibility domains such as self-direction and social accountability remained statistically unchanged, indicating that traditional instruction had limited impact on psychosocial development.

3. Between-Group Comparison After the Experiment

Table 7 Comparative analysis of volleyball theoretical knowledge, physical fitness, and professional skills between the experimental group and the control group students after the experiment

Project	Experimental Group M±SD	Control Group M±SD	T	P
Theoretical results	77.42±4 .77	73.67±4 .07	2 .928	0 .005*
Standing long jump	241.92±14.88	225.58±13.46	3.988	<0.001*
Half "m" move	17.96±3.2	20.96±2.81	-3.456	<0.001*
Passing (two persons)	9.38±2.28	7.29±1.37	3.839	<0.001*
Setting (two persons)	6.42±2.23	4.79±1.02	3.252	0.003*
Serve	3.75±1.23	2.54±1.18	3.482	<0.001*

(P< 0.05* indicates a significant difference.)

Table 8 Comparative analysis of responsibility level, social responsibility, and problem-solving between the experimental group and the control group students after the experiment

Project	Experimental Group M±SD	Control Group M±SD	T	P
Make great efforts	5.38±0.35	4.81±0.66	3.661	<0.001*
Direction	5.27±0.62	4.72±0.58	3.19	0.003*
Follow the classroom Routine	5.36±0.51	4.66±0.68	4.008	<0.001*
Respect	5.28±0.43	4.65±0.63	4.116	<0.001*
Cooperate	5.38±0.36	4.54±0.54	6.346	<0.001*
Help others	5.37±0.61	4.64±0.57	4.316	<0.001*
Social accountability Score	61.21±2 .13	56.50±5 .85	3 .708	<0.001*
Problem-Solving	89.08±5 .99	81.29±1 0.19	2 .332	0 .029*

(P < 0.05* indicates a significant difference.)

Post-test comparisons (Tables 7 and 8) reveal that students in the TPSR group significantly outperformed the control group across all domains. Cognitive (theoretical knowledge), psychomotor (technical and physical skills), and affective (responsibility and problem-solving) outcomes were all superior in the experimental group ($p < 0.001$).

Increased motivation and effort appear to have translated into quantifiable athletic performance, as evidenced by the TPSR group's improved physical indicators, including vertical jump and shuttle run. The TPSR principle of Respect and Effort, which promoted a more orderly and encouraging learning environment, is responsible for these improvements.

Additionally, the experimental group's psychosocial development was more noticeable. Increased social responsibility and peer interaction were probably influenced by the structured emphasis on cooperation and helping others, which are important TPSR components. Students progressed toward the Transfer level of TPSR, applying acquired values in wider contexts, as evidenced by their increased capacity for self-regulation and independent learning.

All things considered, the TPSR model yielded comprehensive advantages that went beyond conventional skill development. The model promoted discipline, accountability, and self-reliance in addition to aiding in cognitive and physical development. The obvious differences from the control group highlight how well TPSR promotes well-rounded development through instruction that is value-driven and student-centered.

These results lend credence to TPSR's inclusion in higher education physical education programs, particularly for those that seek to foster students' psychosocial skills in addition to their athletic prowess.

Discussions

In sports education, the results of this study support the efficacy of the Teaching Personal and Social Responsibility (TPSR) model as a holistic pedagogical approach that fosters moral growth and physical competency. In line with previous findings by Pan et al. (2019) and Carreres–Ponsoda et al. (2021), who noted that TPSR promotes student responsibility and social behavior through structured peer interaction and autonomy–supportive environments, students taking TPSR–based volleyball classes showed increased initiative, improved self–regulation, and a heightened sense of collaboration.

This study used a semester–long implementation and a mixed–methods approach, combining quantitative assessment with qualitative observation to evaluate changes in student outcomes, in contrast to many domestic studies that rely on short–term interventions. The results' validity is increased by this methodological rigor, which also adds fresh perspectives to the expanding body of research on TPSR applications in Chinese higher education. This research shows that TPSR is not only applicable in Western contexts but also flexible and effective in culturally diverse educational frameworks, which is consistent with findings from Hellison (2011) and further developed by Sánchez–Alcaraz et al. (2021).

Crucially, the findings show that the contextual implementation of TPSR is crucial to its success. In order to operationalize abstract values like respect, effort, and helping others, strategies like small–group discussions, student–led reflections, and flexible role assignments were essential. These teaching strategies helped close the gap between students' observed behaviors and theoretical responsibility levels, supporting earlier research that highlighted how crucial it is to modify TPSR for particular classroom settings (Manzano–Sánchez & Valero–Valenzuela, 2019).

Nevertheless, a number of difficulties surfaced throughout the procedure. These include teachers' uneven application of the TPSR principles, the scarcity of moral development assessment tools, and the length of the classes, which occasionally made it difficult to advance through all five TPSR levels—especially the transfer stage. These drawbacks highlight the necessity for future studies to concentrate on creating teacher support networks, scalable assessment tools, and implementation guidelines that are culturally appropriate.

There are also significant ramifications for curriculum and teacher preparation. In order to promote responsibility-driven learning, educators need to be well-versed in both TPSR theory and useful teaching techniques. By incorporating TPSR into teacher preparation programs, educators can be better equipped to use student-centered methods and encourage physical education students' holistic growth. Such integration may have long-term positive effects on student behavior, academic motivation, and social-emotional development, as proposed by Gil-Madrone et al. (2020).

In summary, the TPSR model has great potential to transform physical education into a more holistic and value-oriented experience, but systemic alignment is necessary for its long-term effects. This alignment can be achieved through supportive educational policies, adaptive curricula, and focused teacher training. When these conditions are met, TPSR can be a game-changing model for developing university students' athletic ability and moral character.

Knowledge from Research

This chapter presents the conclusion, discussion, and recommendations for The Effect of Volleyball learning management using the TPSR Model on learning Achievement and Responsibility of student in SIAS University

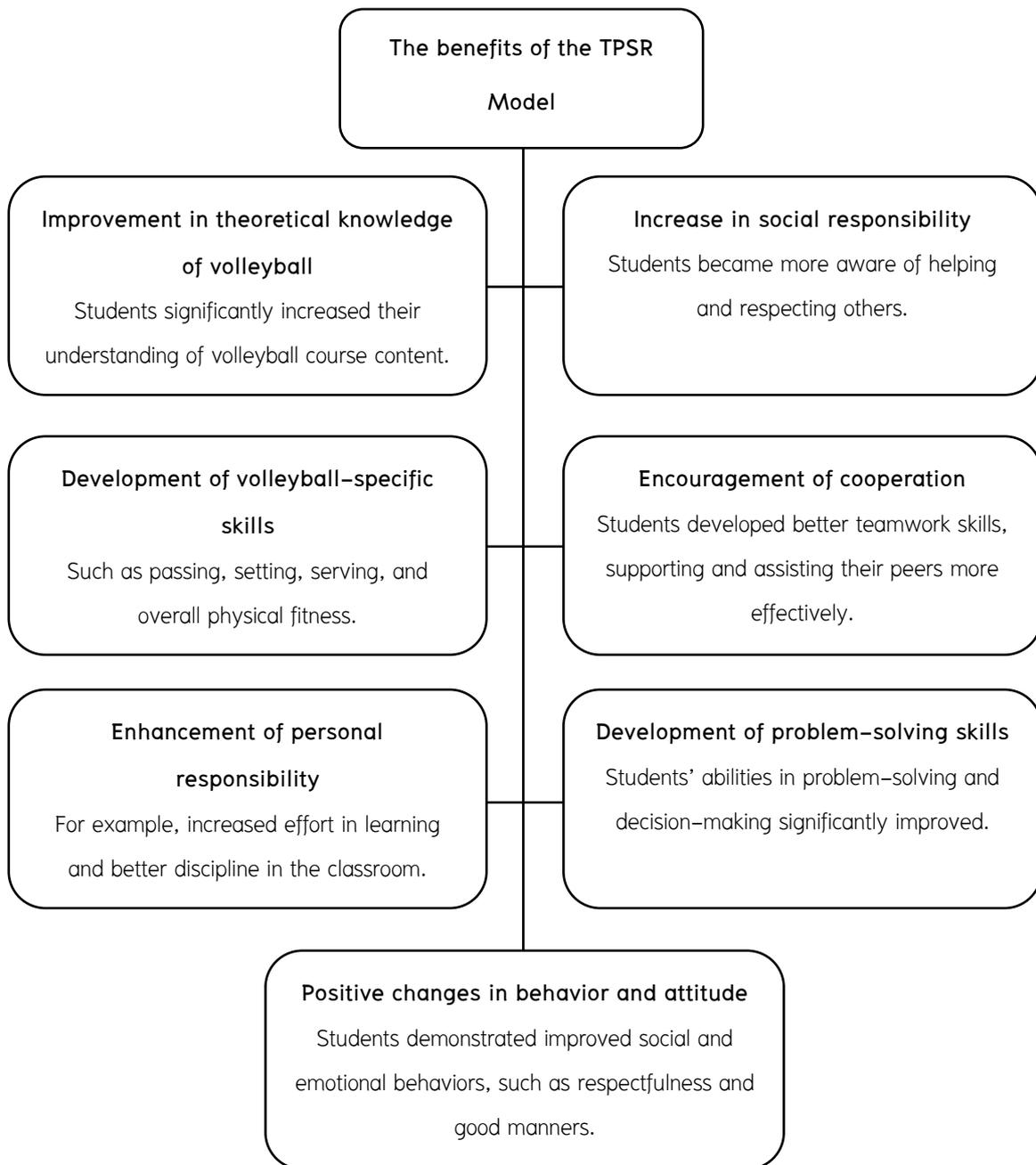


Figure 3 Benefits of the TPSR Model

Conclusion

This study demonstrated that implementing the Teaching Personal and Social Responsibility (TPSR) model in college-level volleyball instruction led to significantly greater gains in student learning compared to traditional methods.

In addition to enhancing students' technical proficiency and theoretical understanding, TPSR promoted independent learning, social awareness, and personal accountability. While the

control group's gains were modest and mostly skill-based, the experimental group demonstrated notable improvements in both psychosocial development and physical performance. These results highlight how well TPSR supports holistic education and establish it as a useful framework for combining moral and physical development in sports education.

Suggestions

Theoretical knowledge, technical proficiency, responsibility, and independent learning were all successfully improved by the TPSR model. Future incorporation into university volleyball programs is advised in order to foster moral and physical growth.

Teachers should integrate TPSR with a variety of student-centered approaches that promote accountability and engagement in order to optimize its effects. To guarantee holistic development, moral education and skill development should be carefully balanced.

Teachers must also clearly define the levels of responsibility and modify the content according to the needs of the students. Fostering a deeper understanding and internalization of responsibility requires flexibility in instructional strategies, such as the use of real-life scenarios and reflective exercises.

Lastly, future research should extend implementation periods and further validate these findings across a variety of contexts, as time constraints hindered the development of the “transfer” level of TPSR.

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