



Developing a Goal-Achieved Management Training Program for Basketball Class in Vocational College Students

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Abstract

Background and Aims: Basketball instruction in vocational colleges often involves students with diverse skill levels and learning needs, making it difficult for conventional training methods to maximize individual performance. Integrating goal-achievement management into basketball training may enhance students' motivation, self-regulation, and learning outcomes while improving physical fitness and sport-specific skills. This study aimed to develop and evaluate the effectiveness of a goal-achievement management training program for improving physical fitness and basketball skills among vocational college students.

Methodology: A research and development approach with a quasi-experimental design was employed. The program was developed through a review of relevant literature and semi-structured interviews with nine experts and validated by five experts (IOC = 0.90). Forty vocational college students were assigned to matched experimental and control groups. Both groups completed an eight-week basketball training program (three sessions per week, two hours per session). The experimental group additionally participated in a goal-achievement management workshop and implemented weekly goal-setting with coach feedback. Physical fitness and basketball skills were assessed before and after the intervention. Data were analyzed using descriptive statistics, paired-samples t-tests, and independent-samples t-tests at the .05 significance level.

Results: The experimental group demonstrated significantly greater improvements in agility, lower-body power, and all basketball skill tests than the control group ($p < .05$). Within-group analysis also showed significant improvements in all physical fitness and basketball skill measures following the intervention ($p < .05$).

Conclusion: The goal-achievement management training program was more effective than conventional basketball training in enhancing physical fitness and basketball performance among vocational college students.

Keywords: Basketball Training; Goal-Achievement Management; Vocational College Students





Introduction

Physical education is crucial for cultivating students' physical proficiency, movement understanding, health-related fitness, social engagement, and enduring involvement in physical activity. In modern education, physical education transcends mere repeated skill repetition and is anticipated to foster motivation, autonomy, decision-making, and self-regulated learning. Research has demonstrated that students are more likely to participate actively in physical education when the learning environment encourages competence, autonomy, and relatedness (Ntoumanis, 2001; Standage et al., 2005).

Basketball is extensively utilized in physical education due to its need for physical fitness, technical proficiency, strategic decision-making, collaboration, and constant movement. However, basketball training in vocational institutions generally faces the challenge of heterogeneous student abilities. Certain pupils may already have fundamental basketball experience, while others may be novices. When teachers use the same conventional drills for all learners, pupils with weaker skills may feel discouraged, while more advanced students may lose interest. Consequently, proficient basketball instruction must establish defined learning objectives, gradual practice assignments, feedback, and opportunities for pupils to assess their own advancement.

Goal setting is a recognized motivational technique that can improve learning and performance. Goal-setting theory posits that defined and challenging objectives, when coupled with feedback and commitment, can focus attention, enhance effort, foster persistence, and stimulate the application of effective tactics (Locke & Latham, 2002). In athletic and exercise contexts, goal setting has been shown to enhance performance when objectives are quantifiable, attainable, and aligned with the individual's existing capabilities (Kyllo & Landers, 1995). Consequently, goal planning can serve as an effective pedagogical method in basketball instruction, especially when students are motivated to establish weekly objectives and assess their advancement with the guidance of a teacher or coach.

Moreover, motivational theories in physical education assert that students acquire knowledge more efficiently when they view themselves as active participants in the learning process. Self-determination theory posits that autonomy-supportive instruction enhances intrinsic motivation, engagement, and persistence in physical education (Standage et al., 2005; Van den Berghe et al., 2014). In basketball education, this implies that students must not only adhere to instructor directives but also understand their individual performance objectives, seek constructive criticism, and engage in strategizing for their improvement.

Game-based and student-centered techniques have also been recommended in physical education because they assist students in combining technical skills with real game circumstances. The Teaching Games for Understanding approach enhances tactical awareness, decision-making,





and skill execution via modified games and reflective questioning (Barba-Martín et al., 2020). Likewise, performance evaluation in games must take into account not only discrete technical competencies but also students' capacity to utilize those competencies in significant gameplay contexts (Memmert & Harvey, 2008).

A goal-achievement management training program may be especially beneficial for vocational college students as it associates basketball practice with explicit performance outcomes, individual accountability, and ongoing enhancement. This approach assists educators in addressing variations in students' abilities by establishing personalized objectives, tracking weekly advancements, and offering supplementary practice when objectives are unmet. This method may enhance basketball abilities, including passing, dribbling, lay-up shooting, and free throws, as well as physical fitness attributes such as agility, power, and endurance.

This study aims to establish a goal-achievement management training program for basketball targeted at vocational college students. The program aims to amalgamate goal planning, organized basketball practice, coach feedback, and performance assessment to enhance students' physical fitness and basketball skills more efficiently than conventional training approaches.

Objectives

1. To develop an Achieved Goal Management Training Program in basketball for vocational college students.
2. To compare the results of basketball skills and selected physical fitness between the pretest and posttest of students trained by the Achieved Goal Management Training Program.
3. To compare the results of basketball skills and selected physical fitness tests between the student group trained by the Achieved Goal Management Training Program and the student group trained by the Traditional Training Program.

Literature Review

Research in physical education underscores that effective instruction should cultivate students' motor competence, physical fitness, motivation, decision-making skills, and sustained participation in physical exercise throughout life. Modern physical education has transitioned from teacher-centered instruction to learner-centered methodologies that incorporate skill practice, tactical comprehension, collaboration, feedback, and self-regulated learning. Bailey et al. (2009) contended that physical education and school sports can enhance physical, social, emotional, and cognitive development when programs are deliberately structured and pedagogically robust. Dyson et al. (2004) asserted that instructional methods, including cooperative learning, sport





education, and tactical games, create significant learning environments by fostering responsibility, interaction, and active engagement.

In basketball instruction, pedagogical methods should encompass not only isolated technical drills but also facilitate students' comprehension of skill application in game contexts. Game-based methodologies, such as Teaching Games for Understanding, promote the enhancement of tactical awareness, decision-making, and skill execution in students through customized games and reflective learning (Barba-Martín et al., 2020). Memmert and Harvey (2008) emphasized that the evaluation of game performance must encompass both technical execution and tactical application, especially pertinent to basketball skills including passing, dribbling, shooting, and off-ball movement.

Motivation is a crucial element in the learning process of physical education. Self-determination theory posits that students are more inclined to engage, persevere, and enhance their performance when their demands for autonomy, competence, and relatedness are fulfilled. Ntoumanis (2001) discovered a favorable correlation between self-determined motivation and adaptive results in physical education. Standage et al. (2005) further evidenced that autonomy-supportive physical education settings augmented students' motivation and participation. Furthermore, Van den Berghe et al. (2014) showed that teachers' need-supportive actions are crucial for fostering positive student outcomes, while controlling behaviors may diminish motivation and involvement.

Goal setting is acknowledged as a potent method for enhancing learning and performance. Locke and Latham (2002) elucidated that particular and hard objectives enhance performance by focusing attention, augmenting effort, bolstering persistence, and fostering strategy formulation. Kylo and Landers (1995) established through a study synthesis that in sports and exercise, performance can be improved when goals are explicit, measurable, and suitably challenging. Weinberg et al. (2001) discovered that athletes derive advantages from goal-setting procedures when these are explicitly formulated, monitored, and reinforced by feedback.

Feedback and progress assessment are vital elements of goal-directed learning. Hattie and Timperley (2007) contended that appropriate feedback enables learners to comprehend their objectives, assess their progress, and determine further actions. In basketball training, students must engage in repetitive practice while simultaneously obtaining explicit feedback regarding their performance and detailed guidance for enhancement. A goal-achievement management training program is anticipated to assist vocational college students by integrating personalized objectives, systematic practice, instructor feedback, and ongoing performance assessment.

The literature indicates that basketball training in vocational colleges ought to transcend conventional uniform education. Due to variations in students' prior experience, ability, motivation,

and confidence, a systematic goal-achievement management approach may assist educators in more successfully addressing individual learning requirements. Integrating goal planning, student engagement, feedback, and progressive basketball practice can significantly enhance physical fitness and basketball abilities among vocational college students.

Conceptual Framework

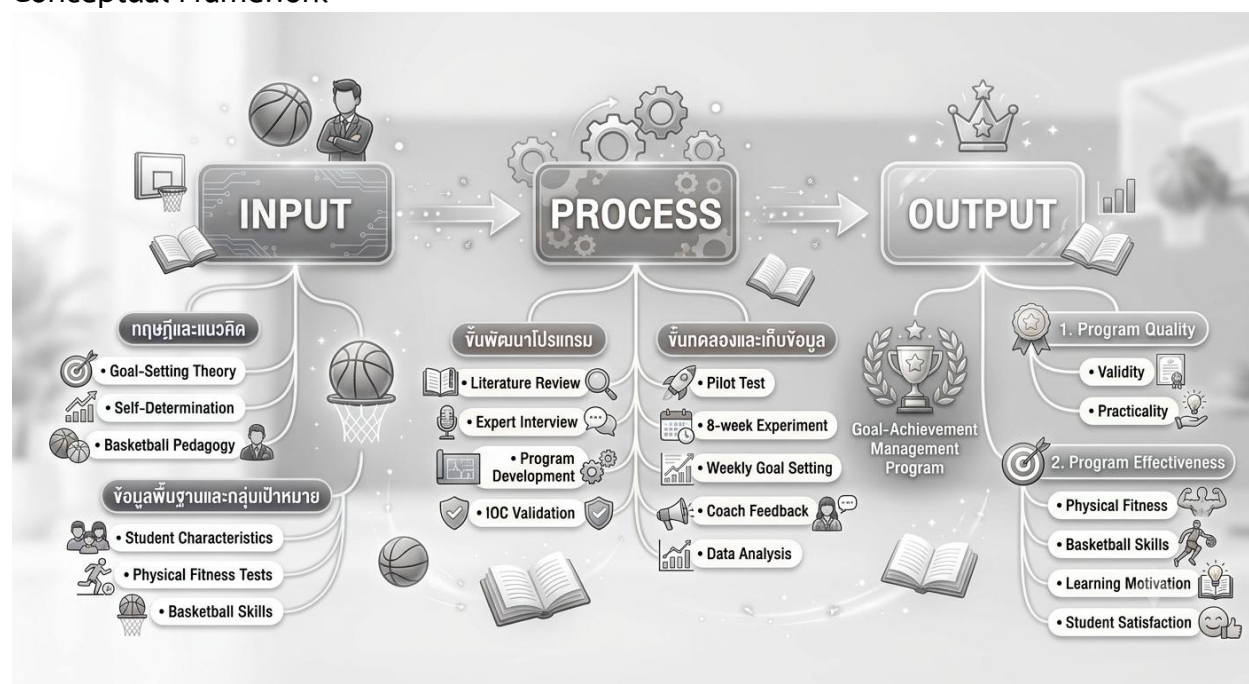


Figure 1 Conceptual Framework

Methodology

Research Design

This study employed a Research and Development (R&D) approach integrated with a quasi-experimental design. The research aimed to develop, validate, and evaluate the effectiveness of a Goal-Achievement Management Training Program (GAMTP) for basketball among vocational college students. The research process consisted of two phases: (1) program development and validation and (2) program implementation and effectiveness evaluation.

Research Procedure

The research was conducted in seven sequential stages.

Stage 1: Program Development

A comprehensive review of the literature on goal-setting theory, achievement motivation, basketball pedagogy, physical fitness training, and student-centered learning was conducted to establish the conceptual framework of the program. Subsequently, semi-structured interviews



were conducted with nine experts in physical education, sports science, basketball coaching, and curriculum development to obtain recommendations regarding program components, instructional strategies, goal-setting procedures, and assessment methods. Information obtained from the literature review and expert interviews was synthesized to develop the preliminary Goal-Achievement Management Training Program.

Stage 2: Selection of Assessment Instruments

Appropriate physical fitness tests and basketball skill tests were selected based on their validity, reliability, and relevance to basketball performance. The physical fitness assessments measured muscular strength, agility, explosive power, and cardiovascular endurance, whereas basketball skill assessments evaluated passing, dribbling, lay-up shooting, and free-throw shooting performance.

Stage 3: Content Validation

The preliminary training program was evaluated by five experts using the **Index of Item-Objective Congruence (IOC)** to determine the content validity of the program. The IOC values ranged from **0.80 to 1.00**, with an overall IOC value of **0.90**, indicating excellent content validity. Recommendations provided by the experts were incorporated to improve the clarity, appropriateness, and feasibility of the training program.

Stage 4: Pilot Testing

The revised program was pilot-tested with a small group of vocational college students who were not included in the main experiment. The pilot study was conducted to examine the practicality of the instructional procedures, the clarity of the training activities, the appropriateness of the assessment instruments, and the overall feasibility of the program. Minor revisions were made based on participants' feedback before the full-scale implementation.

Stage 5: Experimental Implementation

A quasi-experimental pretest-posttest control group design was employed to evaluate the effectiveness of the program. Forty vocational college students voluntarily participated in the study and were assigned to either an experimental group or a control group using matched-pair procedures based on their pretest basketball performance.

Both groups participated in an eight-week basketball training program consisting of three training sessions per week, with each session lasting **two hours**. Before the intervention, students in the experimental group attended a three-hour workshop on goal setting and goal-achievement management. Individual performance goals were established collaboratively between students and coaches every week. Students who did not achieve their weekly goals received additional individualized practice tasks and continuous feedback from their coaches. In contrast, the control



group received conventional basketball instruction without structured goal-setting or individualized performance monitoring.

Stage 6: Data Collection and Analysis

Physical fitness and basketball skill assessments were administered one day before and one day after the eight-week intervention. Descriptive statistics, including means and standard deviations, were calculated for all variables. Paired-samples *t*-tests were used to compare pretest and posttest scores within each group, whereas independent-samples *t*-tests were employed to compare posttest outcomes between the experimental and control groups. Statistical significance was established at the .05 level.

Stage 7: Program Evaluation

Following the completion of the intervention, participants in the experimental group completed a program evaluation questionnaire to assess their perceptions of the training program regarding its appropriateness, usefulness, instructional process, goal-setting activities, and overall satisfaction. The evaluation results were used to determine the practicality and educational value of the Goal-Achievement Management Training Program for future implementation.

Results

The researcher prepared volunteers to be subjects of the experiment, with a primary test on basketball skills in shooting and dribbling to be the baseline for dividing into two groups by ranking the scores and systematic divided in to two groups and drew in to experimental group and the control group. The results of the analysis were analyzed and presented in a table as follows:

Table 1 The Comparison of Posttest and Pretest on Physical Fitness Test and Basketball Skills Test in the Experimental Group

Tests	Unit	Posttest		Pretest		T	p
		$\bar{X}$	SD	$\bar{X}$	SD		
A. Physical Fitness tests							
Push- Ups (30 sec)	Freq	32.40	7.64	31.85	7.70	3.99	0.01*
Zig Zag Run	Sec.	21.03	2.71	20.54	2.43	9.72	0.01*
Standing Board Jump	Cm.	207.65	30.23	194.90	29.26	4.85	0.01*
1000-meter run	Min/sec	4.24	0.53	4.51	0.45	4.91	0.01*
B. Basketball skill tests							
Wall Pass (60 sec)	Freq.	38.60	4.03	34.10	6.45	6.61	0.01*
Slalom Dribbling (60 sec)	Freq.	43.35	7.19	37.10	5.43	5.84	0.01*



Tests	Unit	Posttest		Pretest		T	p
		$\bar{X}$	SD	$\bar{X}$	SD		
Lay-up (60 sec)	Freq.	18.05	2.50	16.15	2.92	8.32	0.01*
Free Throw (10 trials)	Freq.	5.95	0.99	3.35	1.09	8.85	0.01*

Table 1, the comparison of pretest and posttest on physical fitness tests and basketball skills tests in the experimental group, showed that in all four physical fitness tests and four basketball skills tests, the posttest was higher than the pretest at the .05 level of significance. This could conclude that the Achieve Goals Management Training Program on basketball could significantly improve the physical fitness and basketball skills of the vocational students.

Table 2 The Comparison of Posttest and Pretest on Physical Fitness Test and Basketball Skills Test in the Control Group

Tests	Unit	Posttest		Pretest		t	p
		$\bar{X}$	SD	$\bar{X}$	SD		
A. Physical Fitness							
Push- Ups (30 sec)	Freq	34.15	3.97	32.40	7.64	1.43	0.17
Zig Zag Run	Sec.	20.87	2.70	21.03	2.71	0.47	0.64
Standing Board Jump	Cm.	186.95	22.81	185.10	22.83	2.65	0.16
1000-meter run	Min/sec	4.51	0.43	5.02	0.48	1.09	0.28
B. Basketball skills test							
Wall Pass (60 sec)	Freq.	34.00	5.70	33.70	6.13	0.74	0.47
SlalomDribbling(60 sec)	Freq.	35.60	5.60	37.05	5.60	1.44	0.17
Lay-up (60 sec)	Freq.	15.60	2.30	16.40	3.37	1.48	0.16
Free Throw (10 trials)	Freq.	3.50	0.76	3.25	9.10	1.31	0.20

Table 2 showed that the subjects who participated in the traditional basketball training program did not have any significant difference on four physical fitness tests and four basketball skills tests.



Table 3 The Comparison of Post-test on Physical Fitness Test and Basketball Skills Test Between Experimental Group and Control Group

Tests	Unit	Exp. Group		Cont. Group		t	p
		$\bar{X}$	SD	$\bar{X}$	SD		
A. Physical Fitness Test							
Push- Ups (30 sec)	Freq.	33.80	7.84	32.40	2.71	0.18	0.86
Zig Zag Run	Sec.	18.80	2.37	20.88	2.61	2.63	0.01*
Standing Board Jump	Cm	207.65	30.23	186.95	22.81	2.44	0.02*
1000-meter run	Min/sec	4.24	0.53	4.51	0.43	1.77	0.85
B. Basketball Skill Tests							
Wall Pass (60 sec)	Freq.	38.60	4.03	34.40	5.70	2.94	0.01*
Slalom Dribbling (60 sec)	Freq.	43.35	7.19	35.60	3.43	4.34	0.01*
Lay-up (60 sec)	Freq.	18.05	2.50	15.65	2.30	3.16	0.01*
Free Throw (10 trials)	Freq.	5.95	1.00	3.50	0.76	8.73	0.01*

Table 3 showed that at the posttest on physical fitness tests and basketball skills tests between the experimental group and the control group, two tests on physical fitness tests were different at the .05 level of significance, which were Zig Zag Run and standing board jump, but the Push-Ups and 1000 meters run did not have a difference. All four tests in the basketball skills tests were different at the .05 level of significance. These results concluded that the Achieve Goals Management Training Program on basketball could better improve agility and power in physical fitness and basketball skills on passing, dribbling, layup, and free throw shooting than the training with the traditional program.

Conclusion

All test items on physical fitness tests and basketball skills tests in the experimental group at the posttest were higher than those in the pretest at the .05 level of significance. The posttest comparison results of the physical fitness tests on agility and power and all basketball skills tests of the experiment group were significantly higher than those of the control group at the .05 level of significance.



Discussion

The current study revealed that the Goal-Achievement Management Training Program (GAMTP) markedly enhanced students' basketball performance and specific aspects of physical fitness in comparison to traditional basketball education. The experimental group demonstrated superior enhancements in agility, lower-body power, and all basketball skill metrics, thereby validating the efficacy of incorporating organized goal setting into basketball training.

The notable enhancement in basketball abilities can be attributed to the structured learning methodology integrated into the curriculum. Students were urged to set personalized performance objectives, track their weekly advancement, obtain ongoing feedback from coaches, and engage in supplementary practice when performance targets were unmet. This strategy promotes intentional practice and self-directed learning, both crucial for the acquisition of motor skills. Locke and Latham (2002) assert that precise and difficult goals enhance performance by focusing attention on task-relevant actions, augmenting effort, fostering persistence, and facilitating the development of effective learning techniques. Kyllö and Landers (1995), in their meta-analysis of goal-setting research in sports and exercise, determined that suitably challenging goals consistently improve athletic performance across various sports and performance levels. The current findings corroborate the tenets of self-determination theory, which asserts that learning environments that foster autonomy, competence, and relatedness augment intrinsic motivation and prolonged engagement (Deci & Ryan, 2000). The weekly goal-setting approach allowed students to participate actively in planning and evaluating their own learning, thus strengthening their sense of ownership and responsibility for performance improvement. Prior research has consistently indicated that autonomy-supportive pedagogy improves students' motivation, engagement, and perseverance in physical education contexts (Ntoumanis, 2001; Standage et al., 2005). Moreover, Van den Berghe et al. (2014) established that educators who offer constructive feedback and promote student autonomy foster learning environments conducive to psychological growth and enhancement of motor skills.

The enhancement noted in agility and lower-body power may be ascribed to the gradual design of the training regimen. Basketball performance necessitates repeated acceleration, deceleration, multidirectional movement, jumping, and swift directional changes. Students consistently pursued increasingly hard individual objectives, resulting in elevated training intensity and enhanced commitment during the intervention period. This finding aligns with prior research demonstrating that goal-oriented training enhances exercise adherence and physical performance more effectively than conventional practice methods (Weinberg et al., 2001). Moreover, repeated practice accompanied by timely feedback enhances motor learning by reinforcing correct movement patterns and reducing performance errors (Hattie & Timperley, 2007).





An additional significant conclusion is that the Goal-Achievement Management Training Program effectively addressed the range of student abilities typically encountered in vocational colleges. Instead of mandating uniform performance criteria for all students, personalized goal setting allowed pupils to advance based on their unique capabilities while ensuring suitable levels of difficulty. This instructional method corresponds with modern learner-centered pedagogy, which prioritizes varied instruction and ongoing formative assessment to optimize learning outcomes (Dyson et al., 2004). Students with poorer initial performance were able to enjoy steady achievement through realistic short-term goals, but higher-performing students were kept motivated by more difficult objectives.

The results of this study align with other studies illustrating the efficacy of goal-setting treatments in educational and athletic settings. Locke and Latham (2002) reported that goal setting remains one of the most powerful motivational approaches for boosting human performance. Kyllö and Landers (1995) similarly discovered that athletes who exercised with explicit performance objectives regularly surpassed those who trained without set goals. Standage et al. (2005) and Ntoumanis (2001) indicated that autonomy-supportive learning environments markedly enhance students' motivation and academic performance in physical education. These findings collectively reinforce the evidence that the integration of goal setting, constant feedback, and personalized performance monitoring can significantly enhance physical fitness and sport-specific skills.

Notwithstanding these encouraging results, many restrictions must be recognized. The intervention included students from one vocational institution with a limited sample size, potentially constraining the generalizability of the results. Furthermore, the intervention spanned merely eight weeks; hence, subsequent research should explore the enduring effects of goal-achievement management on physical performance, motivation, and skill retention. Subsequent research may investigate the relevance of this training method in more sports and educational contexts with larger and more diverse participant groups.

This study demonstrates that incorporating goal-achievement management into basketball training is more effective than traditional teaching methods. The approach effectively improved students' basketball abilities and certain aspects of physical fitness through the integration of personalized goal setting, ongoing feedback, intentional practice, and structured performance assessment. The findings indicate that goal-achievement management serves as a pragmatic and evidence-based instructional approach for enhancing learning outcomes in physical education and sports training.





Recommendations

Practical Implications

This study presents various practical recommendations for physical education instructors, coaches, and educational institutions.

Physical education instructors are urged to incorporate goal-achievement management systems into basketball instruction and other physical education classes. Setting personalized performance objectives, consistently tracking students' progress, and delivering constructive feedback can improve students' motivation, self-regulation, and academic results. This learner-centered methodology empowers students to assume increased responsibility for their own education while enhancing both physical fitness and sport-specific competencies.

The Goal-Achievement Management Training Program can be modified for various sports and practical skill-oriented courses in vocational and higher education. Integrating structured goal setting, ongoing performance evaluation, and personalized feedback into training programs may enhance skill acquisition, increase student engagement, and elevate academic and athletic performance across various learning environments.

Recommendations for Future Research

Future research should examine the efficacy of integrating incentive-based tactics, including accomplishment recognition, certificates, or performance prizes, as supplementary motivational elements within goal-achievement management programs. These tactics may further augment kids' dedication, perseverance, and sustained involvement in sports training.

Moreover, subsequent research ought to investigate the amalgamation of collaborative learning with goal-achievement management. Integrating personal objectives with small-group or team-oriented goals may enhance communication, collaboration, peer support, and shared responsibility while preserving individual accountability. Comparative studies examining solo versus collaborative goal-setting methodologies might yield significant insights for developing more effective instructional frameworks in physical education.

Moreover, subsequent research should encompass larger and more diverse samples sourced from various educational institutions to enhance the generalizability of the results. Longitudinal studies are advised to investigate the enduring impacts of goal-achievement management on physical fitness, basketball performance, learning motivation, self-regulated learning, and skill retention. Subsequently, future research may examine the relevance of this pedagogical method across other sports, educational tiers, and cultural settings to ascertain its wider educational significance.





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