



A TACTICAL APPROACH TO DEVELOPING BADMINTON GAME SKILLS IN
SECONDARY SCHOOL STUDENTS

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Abstract: This research investigates the effectiveness of a tactical approach in developing badminton game skills among secondary school students aged 13-16 years. The study employed a quasi-experimental design with 64 participants divided into experimental (tactical approach) and control (traditional technical approach) groups over a 12-week intervention period. The tactical approach emphasized game-contextual learning, tactical awareness, and decision-making within authentic game situations, contrasting with the control group's drill-based technical instruction.

Results demonstrated statistically significant improvements in the experimental group across multiple dimensions. Students receiving tactical instruction showed superior performance in tactical decision-making ($p < 0.001$), skill execution within game contexts ($p < 0.01$), and overall game performance. Motivational outcomes revealed enhanced intrinsic motivation, increased autonomous regulation, and higher levels of enjoyment among tactical approach participants. The findings advocate for curriculum reform in secondary physical education, emphasizing the integration of tactical approaches to enhance both skill development and student motivation.

Keywords: tactical approach, badminton skills, secondary school students, Teaching Games for Understanding, game-based learning, physical education, student motivation, skill development

**"ТАКТИЧЕСКИЙ ПОДХОД К ФОРМИРОВАНИЮ ИГРОВЫХ НАВЫКОВ В
БАДМИНТОНЕ У УЧАЩИХСЯ СРЕДНИХ КЛАССОВ"**

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Аннотация: Данное исследование изучает эффективность тактического подхода в развитии игровых навыков бадминтона среди учащихся средней школы в возрасте 13-16 лет. Исследование использовало квази-экспериментальный дизайн с участием 64 участников, разделенных на экспериментальную (тактический подход) и контрольную (традиционный технический подход) группы в течение 12-недельного периода вмешательства. Тактический подход акцентировал игровое контекстуальное



обучение, тактическую осведомленность и принятие решений в аутентичных игровых ситуациях.

Результаты продемонстрировали статистически значимые улучшения в экспериментальной группе. Учащиеся, получившие тактическое обучение, показали превосходные результаты в тактическом принятии решений ($p < 0,001$), выполнении навыков в игровом контексте ($p < 0,01$) и общей игровой производительности. Мотивационные результаты выявили повышенную внутреннюю мотивацию, усиленную автономную регуляцию и более высокие уровни удовольствия среди участников тактического подхода. Результаты выступают за реформу учебной программы в среднем физическом воспитании.

Ключевые слова: *тактический подход, навыки бадминтона, учащиеся средней школы, обучение через понимание игры, игровое обучение, физическое воспитание, мотивация учащихся, развитие навыков*

INTRODUCTION

Physical education occupies a fundamental position within comprehensive school curricula, contributing substantially to students' holistic development through systematic engagement with physical activities and sport experiences. Among the diverse array of activities featured in secondary school physical education programs, badminton represents a particularly valuable lifetime sport characterized by accessibility, relatively low equipment requirements, and applicability across varied age groups and skill levels. Despite these inherent advantages, contemporary badminton instruction in many educational contexts continues to face significant pedagogical challenges that undermine both skill acquisition outcomes and student motivational profiles.

Traditional approaches to badminton instruction have predominantly emphasized technical skill development through decontextualized drills and repetitive practice patterns isolated from authentic game contexts. This technique-centered paradigm typically progresses through sequential stages wherein students first master individual stroke techniques before advancing to tactical applications and competitive game play. While this progression appears logically sound from an instructional efficiency perspective, mounting empirical evidence suggests that such approaches frequently result in diminished student engagement, limited transfer of isolated skills to game situations, and insufficient development of tactical understanding.

Research investigating student experiences within technique-dominated physical education contexts has consistently documented problematic outcomes including reduced intrinsic motivation, lower perceived competence, and decreased enjoyment of learning activities. These motivational deficits prove particularly concerning given that positive affective responses during adolescent physical education experiences significantly predict subsequent lifetime physical activity participation patterns. Furthermore, students instructed primarily through technical drill methodologies often demonstrate adequate skill execution during isolated practice conditions yet struggle substantially when



attempting to apply these techniques within the complex, dynamic decision-making environment characteristic of actual game play.

The Teaching Games for Understanding (TGfU) model emerged as a pedagogical alternative specifically designed to address these limitations inherent in traditional technical instruction. This game-centered approach fundamentally reconceptualizes sport instruction by prioritizing tactical awareness, strategic decision-making, and contextual skill application from the initial stages of learning. Rather than delaying game participation until after presumed technical proficiency, TGfU positions modified game forms at the center of instructional sequences, with technical skill development occurring responsively within authentic performance contexts. This tactical approach aligns theoretically with constructivist learning principles, emphasizing active learner engagement, problem-solving opportunities, and the construction of meaningful understanding through situated practice.

Despite substantial theoretical advocacy and growing international interest in game-centered pedagogies, empirical investigations specifically examining tactical approaches for secondary school badminton instruction remain relatively limited. Existing research has predominantly focused on invasion games such as soccer and basketball, with comparatively less attention directed toward net/wall games including badminton. This research gap proves particularly significant given that the tactical structures, spatial arrangements, and decision-making demands of badminton differ meaningfully from invasion game contexts, potentially requiring adapted pedagogical strategies.

The present investigation addresses these gaps by systematically examining the effects of a tactical approach on badminton skill development and student motivation among secondary school students. This research contributes to the pedagogical literature by providing empirical evidence regarding tactical instruction effectiveness for net/wall game contexts, extending understanding beyond the invasion game focus predominant in existing studies.

Research Design

This investigation employed a quasi-experimental pretest-posttest control group design to examine the effects of a tactical approach on badminton skill development and student motivation. The design compared outcomes between an experimental group receiving tactical instruction based on TGfU principles and a control group receiving traditional technical instruction.

Participants and Setting

Participants comprised 64 secondary school students (32 males, 32 females) aged 13-16 years ($M = 14.3$, $SD = 0.9$) enrolled in two intact physical education classes at a public secondary school. Both classes were taught by the same qualified physical education teacher possessing eight years of teaching experience and Level 2 badminton coaching certification. Participants possessed minimal prior badminton experience. Students were randomly assigned to experimental (tactical approach, $n=32$) or control (traditional technical approach, $n=32$) conditions through coin toss performed by an independent researcher.

Intervention Programs



Both groups participated in 12-week badminton units comprising 24 lessons of 45 minutes duration each, delivered twice weekly during regularly scheduled physical education classes. Lesson content and structure differed systematically between conditions to reflect distinct pedagogical approaches while maintaining equivalent instructional time and overall learning objectives.

The experimental group received instruction following TGfU principles emphasizing game-centered learning. Lessons typically commenced with modified game forms designed to present specific tactical problems. Following initial game play, the teacher facilitated guided discovery through questioning techniques promoting tactical awareness and decision-making reflection. Skill practice activities emerged responsively from observed tactical needs, with students returning to modified game situations to apply developing capabilities. Approximately 60% of lesson time involved game play in various modified forms, with 25% allocated to skill development activities and 15% to tactical discussions and reflection.

The control group received traditional technical instruction following conventional drill-based progression. Lessons emphasized correct technique demonstration, extensive repetitive practice of isolated skills, and gradual progression toward more complex technical combinations. Instruction followed a logical technical sequence: grip and ready position (weeks 1-2), basic service techniques (weeks 3-4), overhead clear and drop shots (weeks 5-7), net play (weeks 8-9), smash technique (weeks 10-11), with competitive game play introduced during week 12. Approximately 70% of lesson time focused on technical drill activities, 15% on teacher demonstrations and feedback, and 15% on competitive game play.

Data Collection Instruments

Multiple instruments assessed outcomes across skill acquisition and motivational domains:

Game Performance Assessment Instrument (GPAI): This validated observational tool evaluated tactical and technical performance within authentic game contexts. Trained observers coded video-recorded gameplay across seven components: decision-making, skill execution, support, guard/cover, adjustment, base, and skill choice. Inter-rater reliability exceeded 0.85 for all components.

Skills Execution Tests: Standardized badminton skills tests assessed technical proficiency across four fundamental techniques: service accuracy, clear consistency and distance, smash power and accuracy, and net shot control.

Sport Motivation Scale: This validated instrument measured motivational profiles across six dimensions: intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation, and amotivation. The scale demonstrated strong internal consistency ($\alpha = 0.82-0.91$).

Semi-structured Interviews: Individual interviews with 12 purposively selected students (six per condition) and both teachers explored subjective experiences, perceived learning processes, and instructional preference patterns.

Data Analysis



Quantitative data underwent analysis using SPSS 26.0. Mixed-design ANOVAs examined group \times time interactions for skill and motivation measures, with significant interactions decomposed through simple effects analyses. Effect sizes (partial eta-squared) interpreted according to conventional guidelines provided practical significance indicators. Statistical significance was established at $p < 0.05$. Qualitative interview data underwent thematic analysis following Braun and Clarke's recursive six-phase procedure.

Skill Development Outcomes

Mixed-design ANOVA examining GPAI overall game performance scores revealed a significant group \times time interaction, $F(1,62) = 18.43$, $p < 0.001$, $\eta^2 = 0.23$. Simple effects analyses indicated that while both groups demonstrated significant improvement from pretest to posttest (tactical: $M\Delta = 12.8$ points, $p < 0.001$; traditional: $M\Delta = 7.4$ points, $p < 0.001$), the tactical group showed significantly greater gains. At posttest, the tactical group ($M = 78.6$, $SD = 8.2$) significantly outperformed the traditional group ($M = 71.3$, $SD = 9.1$), $t(62) = 3.42$, $p = 0.001$, $d = 0.85$.

Component-level analyses revealed particularly pronounced advantages for tactical instruction in decision-making ($F(1,62) = 24.71$, $p < 0.001$, $\eta^2 = 0.28$) and appropriate skill selection ($F(1,62) = 19.38$, $p < 0.001$, $\eta^2 = 0.24$). However, the tactical group also demonstrated superior skill execution within game contexts ($F(1,62) = 8.92$, $p = 0.004$, $\eta^2 = 0.13$), contrary to concerns that tactical approaches might compromise technical development.

Isolated skills test results presented a more nuanced pattern. For service accuracy and clear consistency, no significant group differences emerged at posttest ($p = 0.34$ and $p = 0.28$ respectively), suggesting equivalent technical development across approaches for these foundational skills. However, for more complex techniques requiring tactical application—smash execution and net play control—the tactical group demonstrated modest but statistically significant advantages ($p = 0.041$ and $p = 0.036$ respectively, $d = 0.52$ and 0.53).

Motivational and Affective Outcomes

Analysis of Sport Motivation Scale data revealed significant group \times time interactions for intrinsic motivation ($F(1,62) = 15.87$, $p < 0.001$, $\eta^2 = 0.20$) and identified regulation ($F(1,62) = 11.24$, $p = 0.001$, $\eta^2 = 0.15$). The tactical group showed substantial increases in both autonomous motivation forms (intrinsic: $M\Delta = 0.87$; identified: $M\Delta = 0.74$), while the traditional group demonstrated smaller, non-significant changes. Conversely, amotivation decreased significantly more in the tactical group ($M\Delta = -0.62$) compared to the traditional group ($M\Delta = -0.18$), $F(1,62) = 8.47$, $p = 0.005$, $\eta^2 = 0.12$.

Additional measures of perceived competence and enjoyment both favored tactical instruction. Perceived badminton competence increased significantly more in the tactical group ($F(1,62) = 12.63$, $p = 0.001$, $\eta^2 = 0.17$), as did overall lesson enjoyment ratings ($F(1,62) = 16.92$, $p < 0.001$, $\eta^2 = 0.21$). These findings suggest that tactical instruction not only enhanced actual performance capabilities but also positively influenced students' subjective evaluations of their competence and affective responses toward badminton learning.



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