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Direct Instruction in Teaching Badminton Service Skills

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ABSTRACT

This study examined changes in badminton service performance following the implementation of the Direct Instruction Model among Grade 9 students at Vito National High School, Minglanilla, Cebu, and developed an Enhanced Instructional Guide. A sequential explanatory mixed-method design was employed, involving 90 purposively selected students assessed through a researcher-developed performance rubric and an open-ended learning experience questionnaire. Quantitative data were analyzed using descriptive statistics and paired-samples t-tests, while qualitative responses underwent thematic analysis. Overall badminton service performance improved from a Developing pre-test mean of 1.81 (SD = 0.57) to an Advanced post-test mean of 3.32 (SD = 0.49), with statistically significant improvements across all four service skills ($p < .001$). The Drive Serve recorded the lowest post-test performance, remaining at the Proficient level. Students generally described the instruction as clear, systematic, and confidence-building, although repetitive practice and difficulties with independent execution were reported. These findings suggest that Direct Instruction is a promising approach for developing foundational badminton service skills. Physical Education teachers are encouraged to utilize the developed instructional guide, strengthen targeted practice, and incorporate opportunities for independent learning. The single-school setting, purposive sampling, and absence of a comparison group limit causal interpretation and generalizability. The study contributes an evidence-informed instructional resource supporting SDG 4 (Quality Education) and potentially SDG 3 (Good Health and Well-Being) by strengthening physical education instruction and opportunities for sustained sports participation.

Keywords: *Badminton Service, Direct Instruction, Grade 9 Students, Instructional Guide, Mixed-Method Research, Motor Skills, Physical Education*

1. INTRODUCTION

Physical Education (PE) contributes to learners' holistic development by strengthening movement competence, physical literacy, confidence, and participation in physical activities. Quality PE requires appropriate instructional strategies that enable students to acquire fundamental movement skills and develop positive attitudes toward lifelong physical activity (UNESCO & Loughborough University, 2024). Badminton is one of the sports taught in PE, requiring coordination, accuracy, timing, and technical proficiency. Among its fundamental skills, serving is essential because it initiates each rally and requires controlled execution. The Direct Instruction Model provides a structured approach to teaching these skills through explicit explanations, demonstrations, guided practice, and corrective feedback. Recent investigations have reported improvements in badminton skill performance following direct instructional interventions (Halim et al., 2024; Rahman et al., 2024). Accordingly, this study examined the effectiveness of Direct Instruction in developing the badminton service skills of Grade 9 students and used the findings as the basis for an Enhanced Instructional Guide.

Research Problem

Developing badminton service proficiency presents instructional challenges because students must coordinate appropriate grips, body positioning, racket movements, timing, and shuttlecock placement. These technical requirements are particularly challenging for learners with limited experience and insufficient opportunities for guided practice. Ma'arif et al. (2024) identified moderate levels of badminton serving proficiency among physical education students, emphasizing the importance of strengthening fundamental serving techniques. Recent empirical evidence supports structured instruction in badminton. Halim et al. (2024) reported a 46.24% improvement in basic badminton technique performance following Direct Instruction, while Rahman et al. (2024) documented significant pre-test and post-test improvements among secondary school students. Related studies have also demonstrated improvements in serving performance through structured demonstrations and alternative instructional approaches (Ramlah et al., 2025; Veralia et al., 2025). Although these studies support the value of structured badminton instruction, the reviewed literature provides limited context-specific evidence concerning the combined assessment of four distinct service skills and students' learning experiences under Direct Instruction in Philippine junior high schools. This study addressed that gap by examining the Low Short Serve, Long High Serve, Flick Serve, and Drive Serve among Grade 9 students at Vito National High School, Minglanilla, Cebu, during the fourth quarter of Academic Year 2025–2026. Its findings were intended to inform the development of an Enhanced Instructional Guide for badminton service skills.

Assumptions of the Study

The study was guided by the assumption that systematic demonstrations, guided practice, repetition, and corrective feedback could facilitate students' acquisition and refinement of badminton service skills. This assumption is consistent with evidence demonstrating the benefits of observational learning and feedback for motor-skill development in Physical Education (Han et al., 2022a, 2022b). The study further assumed that Grade 9 students could demonstrate measurable changes in their execution of the four badminton service skills following structured instruction. Consistent performance assessment procedures were considered necessary to compare their pre-test and post-test performance. Students' reported learning experiences were also expected to provide relevant information about the clarity, usefulness, and challenges of the instructional approach. The null hypothesis stated that there was no statistically significant difference between the students' pre-test and post-test badminton service performance following the implementation of the Direct Instruction Model.

Objectives of the Study

This study aimed to determine the effectiveness of the Direct Instruction Model in teaching badminton service skills among Grade 9 students at Vito National High School, Minglanilla, Cebu, during the fourth quarter of Academic Year 2025–2026, as the basis for an Enhanced Instructional Guide. Specifically, it sought to assess students' pre-test performance in the Low Short Serve, Long High Serve, Flick Serve, and Drive Serve; evaluate their post-test performance following the implementation of Direct Instruction; determine whether a statistically significant difference existed between their pre-test and post-test performance; describe their learning experiences while using the instructional model; and develop an Enhanced Instructional Guide in Teaching Badminton Service Skills based on the study's findings.

Theoretical or Conceptual Basis

The study was anchored on three complementary learning perspectives: Behaviorism, Social Learning Theory, and Skill Acquisition Theory. These perspectives explain how structured instruction, demonstration, repetition, and feedback can support the development of observable motor skills. Behaviorism, particularly the principles associated with B. F. Skinner, emphasizes learning through observable responses and reinforcement. Leeder (2022) explained the relevance of operant conditioning to sport coaching, including the reinforcement of desired athletic behaviors. Applied to badminton instruction, this perspective supports repeated skill practice, identification of errors, and corrective feedback to reinforce appropriate movement execution. Social Learning Theory, associated with Albert Bandura, emphasizes learning through observation, modeling, and imitation. Firmansyah and Saepuloh (2022) highlighted the interaction of cognitive, behavioral, and environmental factors in learning. Similarly, Han et al. (2022b) found strong evidence supporting observational learning in the development of motor skills in Physical Education. This perspective supports the teacher's role in demonstrating appropriate badminton service techniques before learners attempt and refine the movements themselves. Skill Acquisition Theory provides a developmental perspective on how learners move from understanding a skill to performing it with greater consistency through practice. In badminton, this progression involves understanding the grip, stance, racket movement, and contact point before refining coordination, accuracy, and timing. Han et al. (2022a) demonstrated the contribution of feedback to motor-skill learning, while Treschman et al. (2024) emphasized the importance of students actively interpreting and using feedback to improve their performance. Conceptually, the study examined the Direct Instruction Model as the independent variable and students' badminton service performance as the dependent variable. The instructional process incorporated explicit explanations, teacher demonstrations, guided practice, repeated execution, and feedback. Changes in service performance were assessed through pre-test and post-test evaluations, while students' learning experiences provided supplementary qualitative evidence. These findings served as the foundation for developing the Enhanced Instructional Guide.

This study aligns primarily with Sustainable Development Goal 4 (Quality Education) and contributes indirectly to Sustainable Development Goal 3 (Good Health and Well-Being). Its strongest alignment is with SDG 4, particularly the promotion of effective, inclusive, and quality learning opportunities. By examining an instructional model designed to improve students' badminton service skills, the study contributes evidence that may support improved PE teaching practices, instructional planning, and learner competence. The proposed Enhanced Instructional Guide also offers a practical resource that teachers and schools may adapt to strengthen instructional quality and the continuity of skill-based learning (UNESCO & Loughborough University, 2024). The study also supports the educational dimensions of SDG 3 by promoting the acquisition of fundamental sports skills that may encourage confidence and participation in physical activity. Quality physical education is recognized as an important

contributor to physical well-being, active lifestyles, and youth development (United Nations General Assembly, 2024). In terms of sustainability, the study primarily contributes to educational and institutional sustainability through the development of a potentially reusable, evidence-informed instructional guide. It also has potential implications for public health sustainability by supporting skill development that may encourage continued engagement in physical activities. However, because the research assessed badminton service performance and learning experiences rather than long-term physical activity or health outcomes, these broader sustainability contributions remain prospective rather than directly measured.

2. METHODOLOGY

Research Design

The study utilized a sequential explanatory mixed-method research design, integrating quantitative and qualitative approaches. The quantitative component employed a one-group pre-test and post-test design to evaluate changes in students' performance in four badminton service skills: Low Short Serve, Long High Serve, Flick Serve, and Drive Serve. The qualitative component explored students' learning experiences following the instructional intervention through an open-ended interview questionnaire administered to selected participants. Responses were examined using Braun and Clarke's (2022) thematic analysis to identify recurring patterns and themes. Integrating both components provided a comprehensive assessment of students' performance and experiences under the Direct Instruction Model.

Research Locale or Study Setting

The study was conducted at Vito National High School, a public secondary school located in Teves, Vito, Minglanilla, Cebu, Philippines, during the fourth quarter of Academic Year 2025–2026. The instructional activities and performance assessments were conducted in the school's covered court or gymnasium, which provided space for badminton instruction and practical demonstrations. Standard badminton equipment, including rackets, shuttlecocks, and nets, was available to facilitate the instructional activities and skill assessments in a controlled and safe learning environment.

Participants or Data Sources

The study involved 90 Grade 9 students from three selected sections of Vito National High School, with 30 students representing each section. The respondents comprised 38 male students (42.22%) and 52 female students (57.78%). Purposive sampling was employed to select students enrolled in Physical Education who had limited experience in performing badminton service skills. This sampling approach ensured that participants met the study's selection criteria and were appropriate for assessing changes in fundamental badminton serving performance. Quantitative data were obtained from the students' pre-test and post-test assessments, while qualitative data were gathered from selected participants through an open-ended questionnaire.

Research Instruments or Materials

Two researcher-developed instruments were utilized: a holistic performance assessment rubric and an open-ended learning experience questionnaire. The performance rubric assessed students' execution of the four badminton service skills based on technique, accuracy, coordination, control, timing, consistency, and errors committed during performance. The rubric employed a four-point rating scale consisting of Advanced (4), Proficient (3), Developing (2), and Needs Improvement (1). Mean scores were interpreted using the following ranges: 3.26–4.00 for Advanced, 2.51–3.25 for Proficient, 1.76–2.50 for Developing, and 1.00–1.75 for Needs Improvement. The categories reflected the quality of skill execution, ranging from consistent performance without errors to performance requiring substantial improvement. The open-ended questionnaire collected students' perceptions, experiences, and challenges while learning

badminton service skills through Direct Instruction. The questionnaire underwent expert validation and was administered following the instructional intervention and post-test assessment. Badminton rackets, shuttlecocks, nets, and instructional demonstration materials were used to support the teaching and assessment activities.

Data Gathering Procedure

Data collection began after obtaining the necessary approvals from the Public Schools District Supervisor and the school head of Vito National High School. The researcher conducted an orientation to explain the study's objectives and procedures and obtained informed consent from the participants and their parents or guardians. A pre-test practical assessment was administered to determine students' initial performance in the Low Short Serve, Long High Serve, Flick Serve, and Drive Serve using the holistic performance rubric. Two Physical Education instructors assisted the researcher in evaluating the students' serving skills. Following the pre-test, the researcher implemented the Direct Instruction Model through structured lectures, demonstrations, guided practice, and corrective feedback. Students participated in instructional activities designed to develop their understanding and execution of the four badminton service techniques. Demonstrations and repeated practice provided opportunities to improve movement coordination, accuracy, timing, and control. After the instructional intervention, a post-test was administered using the same performance rubric and assessment indicators to determine changes in students' serving performance. Selected participants subsequently answered an open-ended questionnaire describing their learning experiences and challenges. The completed assessment sheets and questionnaires were reviewed for completeness and accuracy before data processing, analysis, and interpretation. The findings were subsequently used to develop the Enhanced Instructional Guide in Teaching Badminton Service Skills.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistical procedures. Frequency and percentage were employed to describe the distribution of respondents and their performance classifications. Mean scores were calculated to determine the students' pre-test and post-test performance levels in each of the four badminton service skills. The results were interpreted according to the established four-point performance rating scale. A paired-samples t-test was utilized to determine whether a statistically significant difference existed between the students' pre-test and post-test performance. This statistical procedure compares the mean differences between two related measurements (Langenberg et al., 2023) and was applied to assess changes in performance following the instructional intervention (Langenberg et al., 2023). The level of significance was set at 0.05, with p-values below 0.05 indicating a statistically significant difference and providing grounds for rejecting the null hypothesis. Qualitative responses obtained from the learning experience questionnaire were analyzed using thematic analysis to identify recurring experiences, perceptions, and challenges associated with the Direct Instruction Model. This approach facilitated the systematic examination and interpretation of patterns within the students' responses (Braun and Clarke, 2022). The quantitative and qualitative findings were integrated to inform the development of the Enhanced Instructional Guide.

Ethical Consideration

The study was conducted after securing the necessary permissions from the school administration and the Department of Education through the Public Schools District Supervisor. Before data collection, the researcher explained the study's objectives and procedures to the participants and obtained informed consent from the students and their parents or guardians. The researcher communicated that the information gathered would remain confidential and would be used exclusively for research purposes. Confidentiality and privacy assurances were

also included in the research instruments. The badminton performance assessments were conducted within the school's Physical Education facilities under the supervision of the researcher and with assistance from Physical Education instructors.

3. RESULTS AND DISCUSSION

3.1 Badminton Service Skills Performance Before and After Direct Instruction

3.1.1 Low Short Serve Performance

The respondents' Low Short Serve performance increased from a pre-test mean of 1.76 (SD = 0.53), classified as Developing, to a post-test mean of 3.47 (SD = 0.48), classified as Advanced. The reported mean improvement of 1.71 points indicated a substantial increase in performance following the instructional intervention. The post-test results also showed that 71 respondents (78.89%) were classified as Advanced, while none remained in the Needs Improvement category. The improvement suggests that structured demonstrations, progressive practice, and corrective feedback supported students' development of control, coordination, and accuracy in performing the Low Short Serve. This finding is consistent with Halim et al. (2024), who reported improved badminton performance following Direct Instruction. Rozaqi et al. (2025) similarly demonstrated that structured and repeated practice improved short-serve performance among young badminton athletes. Although the instructional approaches differed, both studies support the importance of systematic practice in developing fundamental serving skills.

3.1.2 Long High Serve Performance

The respondents' Long High Serve performance improved from a pre-test mean of 1.71 (SD = 0.54), interpreted as Needs Improvement, to a post-test mean of 3.37 (SD = 0.46), classified as Advanced. The reported mean increase was 1.66 points. Following the intervention, 57 respondents (63.33%) reached the Advanced category, 27 (30.00%) were classified as Proficient, and none remained in the Needs Improvement category. The findings indicate improved execution of the Long High Serve, particularly in body positioning, racket preparation, coordinated movement, and control. The progress is consistent with Fahmi et al. (2025), who reported improvements in long-service badminton techniques through systematic drills and repeated practice. These findings support the instructional value of demonstrations, structured exercises, and feedback when teaching technically demanding badminton skills.

3.1.3 Flick Serve Performance

The respondents' Flick Serve performance increased from a pre-test mean of 1.94 (SD = 0.63), classified as Developing, to a post-test mean of 3.53 (SD = 0.56), classified as Advanced. The reported mean difference was 1.59 points. The post-test distribution identified 51 respondents (56.67%) in the Advanced category, 28 (31.11%) as Proficient, and none in the Needs Improvement category. The improvement indicates that students developed greater competence in performing the coordinated racket movements, timing, wrist action, and shuttlecock placement required for the Flick Serve. González-Peño et al. (2024) similarly reported improved badminton-specific motor skills through a technology-supported instructional intervention. Although their instructional approach differed from Direct Instruction, the findings demonstrate that organized learning activities and opportunities for practical skill application can strengthen badminton performance.

3.1.4 Drive Serve Performance

The respondents' Drive Serve performance improved from a pre-test mean of 1.83 (SD = 0.57), categorized as Developing, to a post-test mean of 3.11 (SD = 0.51), categorized as Proficient. The reported increase was 1.28 points. After the intervention, 32 respondents (35.56%) reached the Advanced category, 36 (40.00%) were classified as Proficient, and 22 (24.44%) remained at the

Developing level. No respondents were classified as Needs Improvement. Although Drive Serve performance improved, it remained lower than the post-test performance of the other three service skills. This suggests that the coordination, timing, racket control, and rapid movement required for this technique may require additional practice. Heidorn (2024) emphasized the importance of appropriate skill instruction and progressive development in teaching badminton to secondary school students. Similarly, Han et al. (2022a) found that feedback can support students' acquisition and refinement of motor skills in Physical Education.

3.1.5 Overall Badminton Service Performance

The respondents' reported overall badminton service performance improved from a pre-test mean of 1.81 (SD = 0.57), classified as Developing, to a post-test mean of 3.32 (SD = 0.49), classified as Advanced. This represented an overall reported increase of 1.51 points. Among the four service skills, the Flick Serve obtained the highest reported post-test mean of 3.53, followed by the Low Short Serve at 3.47, Long High Serve at 3.37, and Drive Serve at 3.11. The overall findings indicate improved student performance following the implementation of the Direct Instruction Model. These results are consistent with Rahman et al. (2024), who reported significant improvements in students' basic badminton techniques following a direct instructional intervention. Likewise, Halim et al. (2024) demonstrated the potential of structured demonstrations, guided practice, and corrective feedback to improve badminton skill acquisition. The present findings extend this evidence by examining four specific badminton service techniques among Grade 9 students.

3.2 Significant Differences Between Pre-Test and Post-Test Performance

The paired-samples t-test results showed statistically significant improvements in all four badminton service skills, with p-values below .001. The Low Short Serve obtained a mean difference of 1.71, $t = 27.51$, and Cohen's $d = 2.90$, while the Long High Serve recorded a mean difference of 1.66, $t = 26.47$, and $d = 2.79$. The Flick Serve registered a mean difference of 1.59, $t = 19.48$, and $d = 2.05$, whereas the Drive Serve recorded a mean difference of 1.28, $t = 18.63$, and $d = 1.96$. All reported effect sizes were classified as very large. Consequently, the null hypothesis of no significant difference between pre-test and post-test performance was rejected for all four competencies. The statistical results demonstrate substantial within-group performance improvements following Direct Instruction. The findings are consistent with Rahman et al. (2024) and Halim et al. (2024), whose studies documented improved badminton performance following structured instruction. Han et al. (2022a) also provided meta-analytic evidence that feedback supports motor-skill learning in Physical Education. Nevertheless, because the present study employed a one-group pre-test and post-test design without a comparison group, the improvements cannot be attributed exclusively to the instructional model.

3.3 Students' Learning Experiences Using the Direct Instruction Model

3.3.1 Learning Experience Through Direct Instruction

The qualitative findings revealed that students generally described their learning experiences as clear, organized, systematic, and easy to follow. Respondents emphasized that teacher demonstrations and explanations helped them understand the proper techniques for executing badminton service skills. Participants also reported greater engagement during practice and improved familiarity with fundamental movements. These experiences indicate that explicit demonstrations and teacher guidance were helpful in supporting students' understanding of movement procedures. Han et al. (2022b) found strong evidence that observational learning can enhance motor-skill acquisition in Physical Education. The students' experiences therefore support the practical value of demonstrating appropriate techniques before requiring learners to perform them independently.

3.3.2 Perceived Effectiveness of Step-by-Step Instruction

Students reported that breaking badminton service techniques into smaller instructional steps made the skills easier to understand and execute. They indicated that progressive practice helped them recognize errors, improve accuracy, and gradually develop confidence in performing the required movements. Immediate feedback was also identified as an important component of their learning experiences. The findings suggest that sequential instruction helped learners concentrate on individual technical components before performing complete badminton serves. Treschman et al. (2024) emphasized the importance of meaningful feedback processes in Physical Education, particularly those that enable students to understand their performance and identify areas for improvement. The respondents' experiences illustrate how guided correction and progressive practice may support skill development.

3.3.3 Independent Practice and Student Confidence

Students generally expressed increased confidence when performing badminton service skills independently after receiving demonstrations and guided practice. Several participants reported greater consistency, improved understanding of proper techniques, and satisfaction with their performance. However, some students experienced nervousness, uncertainty, or concern about making mistakes when practicing without teacher assistance. The findings suggest that independent practice provided opportunities for learners to apply previously demonstrated techniques while identifying remaining performance difficulties. Han et al. (2022a) highlighted the role of appropriate feedback in developing motor competence, while Treschman et al. (2024) emphasized the importance of students actively using feedback during learning. The respondents' experiences indicate that independence developed progressively and that some learners continued to require instructional support.

3.3.4 Perceived Benefits and Challenges of Direct Instruction

Students identified clear explanations, organized demonstrations, structured practice, and immediate feedback as major advantages of Direct Instruction. These instructional features helped them understand the service techniques and recognize errors. Nevertheless, some respondents considered the repeated drills monotonous, reported difficulty remembering instructional steps, and expressed concerns about excessive teacher dependence and limited opportunities for independent exploration or peer interaction. These findings demonstrate that structured instruction offered benefits while presenting potential limitations related to engagement and learner autonomy. Simón-Chico et al. (2023) reported that challenge-based learning could support student motivation, engagement, and badminton-specific learning outcomes. Their findings provide a relevant alternative instructional perspective, suggesting that exploratory and collaborative activities may complement structured skill instruction once students have developed foundational competence.

3.3.5 Perceived Improvement in Badminton Service Performance

Students generally reported positive learning outcomes after participating in Direct Instruction activities. They described improvements in their understanding of badminton service techniques, accuracy, confidence, and ability to perform the movements correctly. Several respondents also characterized their overall learning experiences as enjoyable and beneficial despite difficulties associated with repeated practice and technical coordination. These perceptions are consistent with the quantitative findings showing higher post-test performance across the four badminton service skills. Halim et al. (2024) similarly reported improved skill performance following Direct Instruction, while González-Peño et al. (2024) demonstrated that structured instructional interventions could improve badminton-specific motor competence. Together, the quantitative and qualitative findings indicate that the respondents experienced

meaningful improvement in performance and generally perceived the instructional model positively.

3.4 Development of the Enhanced Instructional Guide in Teaching Badminton Service Skills

Based on the quantitative and qualitative findings, an Enhanced Instructional Guide in Teaching Badminton Service Skills was developed. The guide focuses on the Low Short Serve, Long High Serve, Flick Serve, and Drive Serve and integrates explicit explanations, teacher demonstrations, guided practice, repeated drills, corrective feedback, independent practice, and performance assessment. It also addresses instructional challenges identified by the students, including coordination difficulties, inconsistent timing, repeated errors, and the need for gradual development of independent performance. The developed guide provides a structured instructional resource that Physical Education teachers may use to improve badminton service instruction. Its emphasis on progressive skill development is consistent with Heidorn (2024), who discussed effective strategies for teaching badminton in secondary Physical Education. Furthermore, the findings of Simón-Chico et al. (2023) suggest that incorporating appropriately designed interactive activities may support student engagement alongside technical skill development. The guide represents a research-based instructional output; however, its effectiveness as a separate teaching resource was not independently evaluated in the present study.

4. CONCLUSIONS AND RECOMMENDATIONS

The study examined the performance of 90 Grade 9 students at Vito National High School, Minglanilla, Cebu, following the implementation of the Direct Instruction Model in badminton service lessons. Students' overall performance improved from the Developing category in the pre-test to the Advanced category in the post-test, with statistically significant differences across the Low Short Serve, Long High Serve, Flick Serve, and Drive Serve. Although all four skills improved, the Drive Serve remained at the Proficient level, indicating a continuing need for targeted practice. Qualitative findings reinforced these performance results: students generally described the demonstrations, step-by-step explanations, guided practice, and immediate feedback as clear and helpful in building understanding and confidence. Some nevertheless reported repetitive activities and difficulties with independent performance. Collectively, the findings support Direct Instruction as a promising approach for teaching foundational badminton serves in this school context and informed the development of an Enhanced Instructional Guide.

Physical Education teachers should use the developed Enhanced Instructional Guide to organize badminton service lessons around clear demonstrations, sequenced practice, timely corrective feedback, and performance assessment. Additional attention should be given to the Drive Serve, which showed comparatively lower post-test proficiency, and to students who continue to experience difficulties with coordination, timing, or independent execution. Once fundamental techniques are established, teachers should incorporate partner activities, modified games, and opportunities for independent exploration to address concerns about repetitive, teacher-centered instruction. School administrators should support these activities by maintaining sufficient badminton equipment, safe practice spaces, and relevant teacher training. Students should be encouraged to practice regularly, apply feedback, and monitor their progress, while parents and community sports groups may provide additional opportunities for participation. Future researchers should examine the instructional model in other grade levels and schools, compare it with alternative approaches, and evaluate the developed guide in classroom implementation.

The findings are limited to 90 purposively selected Grade 9 students from three sections of one public secondary school during the fourth quarter of Academic Year 2025–2026. Because the

quantitative component used a single-group pre-test–post-test design without a comparison group, observed improvements cannot be attributed exclusively to Direct Instruction. Performance was assessed using a researcher-developed four-point rubric, while the qualitative component relied on students' reported experiences. The study addressed four badminton service skills rather than broader game performance, and no longer-term retention assessment was reported. Larger, multi-school comparative studies with follow-up assessments could strengthen the transferability and interpretation of the findings.

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