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The Effectiveness of the Direct Instruction Learning Model on the Ability of Badminton Basic Techniques at SMA

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Abstract

This study aims to investigate the impact of the direct instruction learning (DI) model on the acquisition of fundamental badminton skills in a secondary education context. Specifically, it seeks to determine whether DI enhances students' understanding and proficiency in badminton techniques at the secondary education level. This study aimed to ascertain the impact of the direct instruction (DI) learning model on the acquisition of basic badminton skills among students in class XI IPA 3 at SMAN 6 Jakarta. The research method employed was that of an experiment with a pretest-posttest design. The sample was selected using purposive sampling, with a total of 33 individuals included. Data collection techniques employed observation of non-badminton basic skills, with an increase based on pretest and posttest data of 46.24%. Parametric analysis was conducted, which demonstrated a significant value of 0.000 in the sign test for the research instrument's basic skills test grids. The data analysis utilized an alpha level of 0.05, indicating that the DI learning model affects learning outcomes.

Keywords: direct instruction, badminton, basic technique

I. INTRODUCTION

One of the sports included in the Physical Education, Sports and Health (PJOK) curriculum at the high school level is badminton. In the context of learning badminton games with material on basic techniques for holding rackets, the objective is to instill the appropriate techniques in students so that they can perform the movements correctly and with precision. Although the fundamental technique of holding a racket in this badminton game appears straightforward, numerous challenges persist for high school students in mastering it. Improper execution of this fundamental technique can result in significant errors and even injury to the hands during badminton play. In the fundamental technique of holding a racket in a badminton game, there are four primary components that must be mastered by students. These are: The forehand grip, backhand grip, American grip, and combination grip are the four main components of the basic technique of holding a racket in a badminton game. Additionally, the attitude with which one plays is of great importance. A player's attitude, when combined with the mastery of the aforementioned basic techniques, allows for optimal performance.

The observations made by researchers at SMA 6 Jakarta on students' learning of physical education, sports, and health (PJOK), particularly with regard to the fundamental techniques for holding rackets, yielded the following results. A common issue observed is that student learning outcomes have not reached the standard score set by the school, which is 64 for PJOK subjects. This is due to a lack of understanding of the basic techniques of holding a racket, which consequently affects their ability to play badminton correctly and effectively. The results of the persiclus test conducted by researchers in the early stages of this Classroom Action Research demonstrated that students achieved an average score of 63.1 and reached 30% learning completeness.

The poor learning outcomes also have an adverse effect on the quality of PJOK learning.

The research selected the direct learning model as a means of enhancing student learning outcomes and competence. The direct learning model differs from the lecture method in that it employs a variety of techniques, including demonstration, question and answer sessions, and presentations. (Abdullah et al., 2024) and (Feng, 2024) posit that direct learning is not synonymous with the lecture method. However, lectures and resitation (i.e., checking understanding with questions and answers) are closely related to the direct learning model. As stated by Eggen in (Yanti, 2019), the direct instruction model employs a combination of teacher demonstration and explanation with student practice and feedback, with the objective of facilitating the acquisition of the essential knowledge and skills required for subsequent learning. The direct learning model is an effective approach for students to grasp

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the fundamental principles of archival material and to gain practical experience in applying them (Aydın & Murathan, 2024). (Paramita et al., 2024) posit that the direct instruction model enables students to comprehend concepts without misconceptions, as the teacher directly oversees the delivery of the instructional material, ensuring its alignment with the intended learning outcomes. It can thus be stated that the direct learning model allows students to learn alongside their teacher through the use of various existing methods, including demonstrations, questions and answers, and so forth. As posited by (Putra et al., 2024), this direct learning model places particular emphasis on the form of student activity, whereby students express their thoughts, feelings and imagination through written language.

The direct learning model comprises the following syntax/learning steps: (1) conveying learning objectives, (2) the teacher/model demonstrates knowledge, (3) the teacher guides training, and (4) checks students' understanding. (5) Provide opportunities for learners further training and application (Sun, 2024). The direct learning model allows teachers to showcase their abilities and provides learners with the chance to emulate the demonstrated skills of the teacher. Additionally, it permits the teacher to identify and rectify learners' missteps and deficiencies.

Research conducted by (Gertsen et al., 2024) indicates that the use of direct teaching models with a metacognitive approach has a positive impact on the learning outcomes of class X students at SMA Negeri 1 Sungguminasa in the context of chemical bonds. (Istiqomah et al., 2021) reported that the students' pre-test average score was 7.92, while the post-test average score was 12.74. Additionally, the average score for the normalized gain test was 0.40. It can thus be concluded that the learning outcomes of students in class X at SMA Handayani Sungguminasa increased to a moderate extent after the application of the direct learning model. (Xue et al., 2024) employed a descriptive and ANOVA (analysis of variance) approach to analyze the research data at a 5% significance level. The findings of the study led to three main conclusions: (1) contextual learning models are more effective than direct learning models in achieving cognitive learning outcomes, (2) there are notable differences in cognitive learning outcomes between students with high and low achievement motivation, and (3) there is no significant interaction between learning models and achievement motivation on cognitive learning outcomes. Moreover, (Manlapig Jr, 2024) asserted that there was a notable impact of implementing direct learning models on student learning outcomes.

In light of the aforementioned description, it is imperative to implement the requisite measures to enhance student learning outcomes in PJOK subjects, particularly with respect to the badminton game material. One strategy employed by researchers is the implementation of Classroom Action Research, which is designed to enhance student learning outcomes in PJOK lessons through the utilisation of direct learning models. The implementation of the direct learning model allows educators to employ a multitude of pedagogical techniques, including the lecture method, demonstration method, assignment method, question-and-answer method, and presentation method. This facilitates the integration of direct learning models into a dynamic and engaging learning environment. This approach aligns with the provisions of PP No. 19 of 2005, as updated by PP No. 13 of 2015.

The findings of the observations made on the material of fundamental badminton skills in class XI IPA 3 SMAN 6 Jakarta indicate that several learning outcomes were displayed by students. There are still numerous challenges associated with the execution of fundamental skills. The obstacles experienced by students include low learning outcomes for basic skills, with incorrect hand and foot positioning and a lack of ability to coordinate fundamental techniques. The fundamental techniques employed in approaching the net remain erroneous, and the students' learning outcomes fail to meet the minimum completion criteria. The capacity to execute the fundamental techniques of basic skills varies considerably in practice, given that the students in question are typically active in sports and possess proficiency in multiple disciplines. However, during the learning process, they exhibit suboptimal learning outcomes.

Furthermore, the learning atmosphere remains relatively monotonous, which deters students from displaying enthusiasm and focus when engaging in practice activities related to fundamental skill development. Students are primarily focused on performing basic skills directly in the ring, without fully comprehending the requisite steps for executing the fundamental techniques correctly. This approach inevitably affects the final outcome, as poor technique inevitably impacts the overall result. These limitations are corroborated by data obtained from interviews with students and instructors. The constraints of the learning model impact the implementation of the teaching and learning process, as evidenced by the researcher's analysis, resulting in a less diverse learning experience and a less conducive learning environment for students.

(Alhaq et al., 2022) defines the direct instruction (DI) learning model as a teacher-centered approach that prioritizes effective learning strategies for the dissemination of teaching material information.

In response to the challenges encountered by students, this study employs the direct instruction (DI) learning model to enhance student learning outcomes. The research employs the direct instruction (DI) learning model, which prioritizes the mastery of concepts or behavioral change through a deductive approach. It is anticipated that this approach will enhance the skills of the students, particularly their fundamental abilities in badminton. The direct instruction (DI) learning model also prioritizes student engagement in acquiring fundamental skills and acquiring information in a systematic manner. By involving students in the tasks provided, the model allows for a concentration on the essential techniques and basic skills of badminton.

Specifically, the researcher will conduct a study to address the issue of students' difficulties in learning basic badminton skills. The study will employ the direct instruction (DI) learning model.

As outlined by (Kreshchanov, 2023), the advantages of the direct instruction (DI) learning model can be summarized as follows: 1) The direct instruction (DI) learning model enables the instructor to regulate the sequence and scope of the learning material, thereby facilitating the assessment of students' comprehension of the presented material. 2) The direct instruction (DI)

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learning model is considered highly effective when the subject matter to be mastered is extensive and the time available for learning is limited. 3) In addition to hearing the material presented in a lesson, students can also see demonstrations, which enhances their learning experience. 4) Another advantage is that the DI learning model can be used with large numbers of students in a single class.

(Kreshchanov, 2023) identifies the following limitations of the direct instruction (DI) learning model: 1) The direct instruction (DI) learning model is only effective for students with proficient listening skills and does not accommodate for differences in student abilities. 2) It relies on one-way communication. For this model to be effective, students must possess proficient listening skills. However, it is incapable of catering to diverse abilities, knowledge bases, interests, talents and learning styles.

3) The ability to gauge student comprehension of the learning material is severely constrained. Furthermore, a monological approach may lead to students acquiring only the information explicitly provided.

The direct instruction (DI) learning model is characterised by the following attributes: 1) The learning objectives and the model's effects on students, including the learning outcome procedures. 2) The syntax or the overall pattern and flow of the learning activities. 3) The processing system and the learning environment of the model that is necessary for specific learning activities to be carried out successfully (Teteris & Fernāte, 2024)

As outlined by (Zhu & Tongdecharoen, 2023) assessment in the direct instruction (DI) learning model is conducted through the utilisation of exemplars of assessment methods. 1) Students are provided with assessment records that document their efforts and achievements with respect to each learning task. Upon attaining the anticipated level of proficiency, students submit their records to the instructor, indicating their attainment of the learning outcome, and proceed to the subsequent task. 2) Administration of a proficiency test, which may be written, oral, or skill-based. Upon reaching the criterion score by the majority of students, the teacher progresses to the subsequent task. 3) Observation of students' skills through a grid of basic techniques taught. Upon demonstration of the skill by the majority of students, the teacher proceeds to the next task. 4) Utilization of peer observation as an assessment strategy by the teacher.

II. METHODS

The research method is an experiment with a form of experimental design known as a pre-experimental design. In contrast to the experimental design, the independent variable in this design influences the formation of the dependent variable, which is the result of that influence. The presence of external variables that are not under the researcher's control can result in this discrepancy between the independent and dependent variables (Sugiyono., 2017)

In this study, the authors employed a pre-experimental design. A pre-experimental design is a research design where there are still external variables that influence the formation of the dependent variable, and thus the experimental results which are the dependent variable are not solely influenced by the independent variable (Sugiyono., 2017). This can occur because of the absence of control variables and the non-random sampling of the population. For a more specific experimental research design, the authors used a one-group pretest-posttest design research model.

As defined by (Sugiyono., 2017), a population is a generalization area comprising objects or subjects that possess specific qualities and characteristics as defined by researchers for the purpose of study and subsequent conclusion-drawing. (Sugiyono., 2017) defines the entire unit of analysis, which is the target of research, as the population. In this study, the population consisted of all high school class students in Jakarta, numbering 175 individuals.

As stated by (Sugiyono., 2017), the sample represents a subset of the population, encompassing specific characteristics and comprising a representative number of individuals. As W. Gulo (2010) notes, samples are frequently referred to as "examples," that is, subsets of a population. In research, sampling techniques may employ purposive sampling, which involves selecting a subset of the population based on specific criteria. In this study, the researcher selected the XI IPA 3 class, comprising 33 students, as the research sample. This decision was guided by two considerations: (1) the students in this class have a similar average age, and (2) their average learning outcomes are comparatively low compared to other classes.

Data collection techniques are the methods employed by researchers to gather data. This study employs a pre-experimental design with a one-group pretest-posttest model, thus the data collection techniques utilized are tests and measurements. The data collection techniques employed utilize assessments and measurements. According to (Marinho et al., 2024), an assessment is a tool utilized to obtain information regarding individual or collective subjects. Conversely, as articulated by (Teteris & Fernāte, 2024), an assessment may be defined as a tool utilized for the acquisition of data from an object or subject undergoing measurement. The assessment instrument utilized in this study is a test format, namely an assessment rubric or badminton basic skills assessment grid.

III. RESULTS AND DISCUSSION

A. Result of Research

The data presented in this section is derived from an empirical analysis of movement skills and fundamental techniques in badminton, observed and evaluated during the 2014-2015 academic year at SMAN 6 Jakarta. It is a descriptive account of the

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results obtained from the pre- and post-testing of the direct instruction (DI) learning methodology applied to the study of badminton. The data is presented in the subsequent sections.

Table 1. Descriptive Data of Pretest and Posttest of Basic Skills Test Results SMAN 6 Jakarta

Result	Mean	Median	Modus	Min	Max	Std. Deviasi
Pretest	14,09	14	14	11	17	1,665
Posttest	20,61	21	21	18	24	1,749

Table 1 presents the findings of the research, based on which it can be observed that the sample of 33 students demonstrated an average pretest score of 14.09, with a median of 14, a mode of 14, a lowest possible score of 11, a highest possible score of 17 and a standard deviation of 1.665. In comparison, the posttest yielded an average score of 20.61, a median score of 21, a mode of 21, a lowest possible score of 18, and a highest achievable score of 24, with a standard deviation of 1.749. A comparative analysis of pretest and posttest scores is presented in Table 2.

Table 2. Comparison of Average Pretest and Posttest Basic Skills Test Results SMAN 6 Jakarta

Data	Average Learning Outcome
Tes Awal (*Pretest*)	14,09
Tes Akhir (*Posttest*)	20,61

Descriptive analysis of the pretest and posttest data yielded the following results for the basic skills test at SMAN 6 Jakarta: an average pretest score of 14.09 and an average posttest score of 20.61. These figures demonstrate an increase between the two tests, with an overall gain of 6.52 between the two averages. The results of the sign test analysis are presented in Table 3.

Table 3. Posttest - Pretest

	Posttest – Pretest
Z	-5.570
Asymp. Sig. (2-tailed)	.000

The following criteria shall be employed in the event of hypothesis withdrawal: Ha: If the calculated value of Asymp. is found to be statistically significant, then the null hypothesis is rejected. If the resulting p-value is less than 0.05, then the null hypothesis (Ha) is accepted. Table 3 illustrates that the asymp sig (2-tailed) p-value is 0.000, as the p-value of 0.000 is less than 0.05. This indicates that the null hypothesis (Ha) is accepted, suggesting that there is a significant difference between the pretest and posttest at the 5% level of significance. This implies that the direct instruction (DI) learning model has a notable impact on the acquisition of fundamental badminton skills at SMAN 6 Jakarta, with a percentage improvement of 46.24%.

B. Discussion

The research was implemented with the objective of facilitating enhanced acquisition of student competencies related to fundamental badminton techniques via the direct instruction (DI) learning approach. To that end, the research methodology employed a DI learning model, encompassing 1 vs 1 training, double games, serving drills and basic skill challenges.

The implementation of research through the method of 1 vs 1 training, double games, serving exercises, and basic ability challenges has been found to have a significant effect on the improvement of learning outcomes in the basic badminton skills of high school class 6 students in Jakarta. It is noteworthy that students demonstrated an understanding of the requisite phases of movement for performing basic skills. The movement phase encompasses the student's body position, hand positioning, grip on the shuttlecock and racket, and movement when serving. As students progress through the basic skills of the game, their movements become increasingly refined. This is in line with the DI learning model's objective of fostering students' understanding of the game. For this to occur, students must actively engage with the material to achieve the learning objectives.

Moreover, the data analysis results, which serve as the basis for withdrawing the research hypothesis, indicate that several components yield significant outcomes. These include an increase in the average results of the pretest and posttest, as well as the results of the lowest and highest scores. The results of the sign test analysis indicate that the research hypothesis can be accepted, given that there is a discernible impact of the direct instruction (DI) learning model on the learning outcomes of basic badminton skills in SMA 6 Jakarta class students.

The success of enhancing the learning outcomes of fundamental skills is also contingent upon the benefits of the play method. The play method offers supplementary value in augmenting the efficacy of learning in students, with heightened learning

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efficacy, the process of educating students is increasingly concentrated on the material presented. Moreover, the attention and motivation provided by the instructor have a beneficial effect on the students. Their enthusiasm is increasing, and they frequently request that the activities be repeated. This repetition will enhance their understanding and the quality of their movements. Additionally, the students often inquire about the activities that will be conducted next. They are motivated to participate in the upcoming activities.

In addition to the positive outcomes of the DI learning model on basic badminton skills, several challenges emerged during the research process. One such challenge was the large number of students, which made it more difficult to maintain control and individual attention. In addition, some students experience disruptions in their learning focus, necessitating the optimization of the teacher's role through the provision of simple rewards, such as praise, explanations, and applause. This is done with the aim of enhancing students' receptivity to the presented material.

The results of the research, which are supported by previous relevant studies, indicate that the DI learning model plays a role in the learning process, particularly in improving student learning outcomes in basic skills material for SMA 6 Jakarta class students.

IV. CONCLUSIONS

The findings of this study indicate that the direct instruction (DI) learning model has a significant impact on the acquisition of fundamental badminton skills at SMAN 6 Jakarta. The pretest and posttest data demonstrate a notable increase of 46.24%. In light of the findings of this study, the author puts forth the following suggestions: The implementation of the learning process, particularly in the context of badminton, should be conducted using the direct instruction (DI) learning model. In order to enhance student motivation, it is recommended that teachers provide additional rewards in the form of praise. It would be beneficial to incorporate additional, more varied games into the direct instruction (DI) learning model, with the objective of developing fundamental techniques within the context of the basic skills material. Furthermore, greater attention must be given to students who experience difficulty in executing the requisite movement skills during badminton practice activities. In order to enhance the efficacy of the learning process, it is imperative that strategies, models, methods, and delivery methods be employed that are more aligned with the nature and scope of the presented learning material, namely the basic skills of badminton games.

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