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Badminton Learning for Students with Intellectual Disabilities at Special Needs School

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Abstract

This study aims to describe the implementation of badminton learning for students with intellectual disabilities at the Mandiraja State Special Needs School in Banjarnegara, Jawa Tengah. The study used a qualitative approach with data collection techniques in the form of observation, interviews, and documentation. The research subjects included physical education teachers and students with intellectual disabilities. The results showed that badminton learning still faces several obstacles, especially in adjusting learning objectives, implementing activities, modifying learning, and evaluating learning outcomes. Differences in students' motor and cognitive abilities are the main factors that influence the learning process. Nevertheless, teachers have implemented adapted learning strategies through simplifying materials, modifying equipment and game rules, and evaluating according to individual student abilities. Adapted designed badminton learning can support student engagement and help develop motor skills gradually.

Keywords: *Adapted Physical Education, Badminton Learning, Intellectual Disability, Learning Strategies, Motor Skills*

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INTRODUCTION

Physical education plays a crucial role in supporting students' physical, motor, social, and emotional development. For students with special needs, particularly those with intellectual disabilities, physical education serves not only as a means of physical activity but also as a learning tool that helps foster independence, self-confidence, and interpersonal skills (Dermawan, 2018). Therefore, the implementation of physical education in special needs schools needs to be adapted designed to meet the students' characteristics and needs. This aligns with (Widyawan & Sina, 2024), who found that inclusive physical education promotes the physical, social, and emotional development of students with special needs in general classrooms. By using adapted activities, visual aids, step-by-step demonstrations, and supportive guidance, teachers can ensure active participation and optimal learning outcomes.

Adapted Physical Education emphasizes adapting learning objectives, materials,

methods, and resources so that students with certain disabilities can still participate optimally in learning (Kresnapati et al., 2024). One of the materials taught in adapted physical education is badminton. Badminton was chosen because it has relatively simple basic movements, is flexible for modification, and has the potential to develop coordination, agility, and concentration (Sukriadi & Arif, 2021). Teachers provide individualized guidance, repeated practice, and visual supports, while adjusting equipment and rules to promote skill development, motivation, and self-confidence. However, the implementation of badminton learning for students with intellectual disabilities in the field still faces various obstacles.

Theoretically, students with intellectual disabilities have limitations in cognitive abilities, understanding instructions, and mastery of motor skills, thus requiring a different learning approach compared to regular students (Zarwan et al., 2018). Several studies in adapted physical education show that sports learning will be more effective if teachers are able to modify equipment, game rules, and material delivery methods according to student abilities. However, in practice, learning barriers do not only come from student characteristics, but are also influenced by limited facilities and infrastructure, a less flexible curriculum, and teacher readiness in implementing adapted learning. These issues are reinforced by (Noor et al., 2023), who reported that in inclusive schools, the implementation of adapted physical education is frequently challenged by limited facilities, rigid curricula, and low teacher readiness, highlighting the importance of making instructional adjustments and improving teacher competence to facilitate effective learning.

Physical education teachers play a strategic role in determining the success of badminton instruction in special schools. Teachers are required not only to master sports content but also to understand the characteristics of students with intellectual disabilities and to design and implement appropriate learning (Winata et al., 2025). This understanding serves as the basis for teachers in adjusting learning objectives, methods, and types of learning activities to align with students' abilities and needs (Erianti et al., 2025). Without appropriate adjustments, the learning process tends to be less effective, and learning objectives are difficult to achieve optimally.

Based on preliminary observations at the Mandiraja State Special Needs School in Banjarnegara, badminton learning for students with intellectual disabilities still faces various obstacles, both from students, teachers, and supporting learning conditions (Haris, 2018). This situation indicates the need for an in-depth study to identify the obstacles that occur and the solutions applied in the implementation of adapted physical education learning (Qonita et

al., 2024). Previous research has highlighted that developing adapted physical education models using multisensory approaches and tailored instructional strategies can help overcome participation barriers and improve motor skills and engagement among special needs students (Karimah & Rosmi, 2024). Therefore, the purpose of this study is to analyze the obstacles and solutions in implementing badminton learning for students with intellectual disabilities at the Mandiraja State Special Needs School in Banjarnegara. The results of this study are expected to serve as a reflection and reference for adapted physical education teachers in improving the quality of badminton learning in special needs schools.

METHOD

Research Design

This study employed a qualitative approach with a descriptive design to gain an in-depth understanding of the implementation of badminton instruction for students with intellectual disabilities (Gansar et al., 2022). This approach was selected because the study aimed to describe the learning process, the challenges encountered during implementation, and the efforts made by teachers in applying adapted physical education in special education settings. The research was conducted at the Mandiraja State Special Needs School in Banjarnegara, which was chosen because the school provides adapted physical education programs for students with intellectual disabilities. The study was carried out during the current semester of the academic year, with the research activities adjusted to the school's learning schedule.

Research Population and Sample

The population in this study included all parties involved in badminton learning at Mandiraja State Special Needs School in Banjarnegara. The research subjects were selected through purposive sampling, based on their direct involvement and lived experiences in the learning process, a technique commonly used in qualitative studies of adapted physical education to ensure that participants provide rich, relevant data for understanding the phenomenon (Zulpikar et al., 2025). The subjects consisted of one classroom teacher, one physical education teacher, one school principal, and four students with intellectual disabilities who had direct experience in planning, implementing, and participating in badminton learning as the phenomenon under study.

Sampling Techniques

Sampling in this study was conducted using a purposive sampling technique, in which research subjects were selected based on specific considerations. These considerations included participants' direct experiences, understanding, and involvement in badminton learning as the phenomenon under investigation (Fitriatun et al., 2022). By selecting participants with firsthand experience, the data obtained are expected to reveal meaningful and in-depth insights into the participants' experiences in the learning process in accordance with the research focus.

Data Measurement Techniques

Data measurement in this study was conducted through observation, interviews, and documentation (Putri & Murhayati, 2025). Observations were used to obtain data directly related to the implementation of badminton learning. Interviews were used to gather information about the planning, implementation, obstacles, and solutions to learning from the research subjects. Documentation was used as supporting data, including learning tools, activity photos, and other documents related to adapted physical education learning.

Table 1. Data Measurement

No	Theory	Dimension	Indicator	Item
1.	Adapted Physical Education	Learning Planning	1. Teachers have difficulty adjusting learning objectives to the abilities of students with intellectual disabilities.	• What challenges do you face when adapting learning objectives for students with intellectual disabilities? • Students with intellectual disabilities appear to understand the objectives of the activities. • Lesson plans/teaching modules that include learning

			objectives.
		2. Develop learning objectives that are tailored to the abilities and needs of each student.	• What are the challenges in adapting learning objectives to individual student needs? • Students are able to participate in activities that align with the adjusted objectives. • Lesson plans/teaching modules that demonstrate different learning objectives according to student abilities.
	Implementation of Learning	1. The student experiences delays in understanding instructions.	• What parts of the instructions were most difficult for students to understand (e.g., steps, language, written or spoken instructions)? • Students seemed to take longer to respond to the instructions. • Teacher notes on the progress of students' understanding of the instructions.
		2. Provide step-by-step instructions with visual examples and live demonstrations.	• How do you deliver step-by-step instructions during learning activities? • The teacher provides step-by-step instructions. • Photos or videos of the teacher providing step-by-step instructions.
	Learning Modifications	1. Learning tools and environments are inadequate and not completely safe.	• How would you assess the condition of the current learning equipment and environment? • Are the equipment in good condition or damaged, and are the learning spaces clean or dusty/dirty? • Photograph any damaged, incomplete, or unsuitable equipment and document any inadequate or unsafe learning environment conditions.
		2. Conditioning tools and environments to ensure smooth and safe learning.	• What strategies should be used if equipment is damaged or the environment is unsafe? • Ensure the learning space is clean, tidy, and free from potential hazards before activities begin. • Document that the space is clean, safe, and conducive to the smooth running of activities.

		Learning Evaluation	1. Teachers have difficulty assessing student abilities because each child's development varies.	• How do you assess students' abilities, considering that each child develops differently? • Teachers adapt questions or assignments to the different abilities of students. • Collect teacher notes regarding student ability assessments.
			2. Using authentic assessments based on the process and students' actual abilities.	• Do you use assessments that assess students' actual abilities in daily practice or assignments? • Teachers assess students based on the learning process, not just the final results. • Collect assessment sheets that show students' actual processes and abilities.
2.	Constructivism (Vygotsky)	Zone of Proximal Development (ZPD)	Identifying differences in students' abilities when performing badminton movements independently and those that can be done with assistance.	• Interview: What badminton tasks are most difficult for students but can be performed with assistance?
		Scaffolding (strategy of providing gradual assistance).	Analyze the forms of gradual assistance (physical/verbal/visual) and how this assistance is reduced over practice.	• Observation: The type of scaffolding (e.g., handholds) provided during badminton serves and when assistance is discontinued.
		Social Interaction	Analysis of the role of peers (peer tutoring) or teacher assistants in badminton training sessions.	• Interview: How are classmates involved in supporting badminton practice for students with intellectual disabilities?
3.	Motor Learning	Motor (cognitive) learning phase	Analysis of the simplification of basic badminton technique instructions to suit the understanding of students with intellectual disabilities.	• Interview: How do you simplify forehand instructions to make them easier for students to understand?
		Types of practice	Analysis uses repeated practice (Blocked Practice) to help students master basic movements such as serving or clearing.	• Observation: Record the number of repetitions of the exercise without varying the task.
		Feedback	Analysis of the specificity and understandability of feedback given by teachers after students perform inappropriate movements.	• Observation: Record how often the teacher provides direct correction after a student makes a mistake while hitting the shuttlecock.

Data Analysis

Data analysis in this study was conducted qualitatively using an interactive analysis model, which includes data reduction, data display, and conclusion drawing (Hidayat et al., 2024). The analysis process was carried out continuously and reflexively from data collection until the completion of the study, with the aim of understanding and interpreting the meaning of participants' lived experiences related to the phenomenon of badminton learning. Data trustworthiness was ensured through triangulation of techniques and sources, so that the findings reflect participants' actual experiences and the real conditions of the research context.

Data Validity

Data validity in this study was maintained through instrument content validity testing. Validation was conducted by two adapted physical education experts, Dr. Asep Ardiyanto, M.Or., and Jaka Sayidina Ali, M.Pd., who assessed the suitability of the instrument items to the research objectives and the characteristics of students with intellectual disabilities. The expert assessment results were analyzed using the Gregory formula, resulting in a validity coefficient of 0.8. This value indicates that the instrument is valid and suitable for use as a data collection tool in this study (Martyanti et al., 2024). Although the study examined a self-defense assessment instrument for seventh-grade students, the principles of instrument validity and reliability are consistent with those applied in this study.

RESULTS AND DISCUSSION

RESULT

This section presents the research findings obtained from observations, interviews, and documentation related to the implementation of badminton instruction for students with intellectual disabilities at Mandiraja State Special Needs School in Banjarnegara. The findings focus on learning planning, implementation, instructional modifications, and the evaluation of learning outcomes within the context of adapted physical education.

1. Learning Planning

Based on interviews with the physical education teacher, the objectives of badminton learning at the special needs school are adjusted to the abilities of the students. The teacher explained, *"The objectives in the lesson plan are still general, so they need to be simplified in*

the field so that students can follow the activities," and added, *"We continuously adjust the learning objectives according to each student's abilities, especially for those who need extra guidance."*

2. Learning Implementation

During the learning process, students with special needs often have difficulty understanding complex instructions and tend to imitate the teacher's movements. To address this, the teacher provides simple, step-by-step instructions accompanied by direct demonstrations. The teacher stated, *"If the instructions are too long, students will get confused, so we give them step by step while showing an example,"* and added, *"Students usually imitate the demonstrated movements, so direct demonstrations greatly help them understand the learning activities."*

1. Learning Modification

The study also found that modifications to equipment and the learning environment play a crucial role in supporting effective learning. Limitations in facilities and student needs lead teachers to adjust equipment and prepare the learning area before activities begin. The teacher stated, *"Equipment and the court need to be prepared in advance so that the children can move safely and comfortably,"* and added, *"We adjust the racket height and net distance to match the students' motor abilities."*

2. Learning Evaluation

In the evaluation process, differences in student abilities lead teachers to use authentic assessment methods that emphasize the process and development of motor skills rather than just the final result. The evaluation focuses on participation, effort, and gradual improvement, allowing teachers to monitor each student's progress objectively and provide appropriate feedback. The teacher stated, *"Because students' abilities vary, the assessment focuses on the process and development of movements, not the final result,"* and added, *"We record each student's progress from one practice to the next, making the evaluation more objective and aligned with their abilities."*

DISCUSSION

Research results indicate that adapting learning objectives is a crucial aspect of adapted physical education for students with intellectual disabilities. Objectives stated in lesson plans are often general and difficult for students to understand, requiring teachers to simplify and adapt contextually (Cavita et al., 2024). These adjustments focus on mastering basic badminton movements according to each student's individual abilities, which increases student motivation, independence, and understanding (Suardi & Supriadi, 2020). With flexible objectives, students can engage in learning more effectively and optimally.

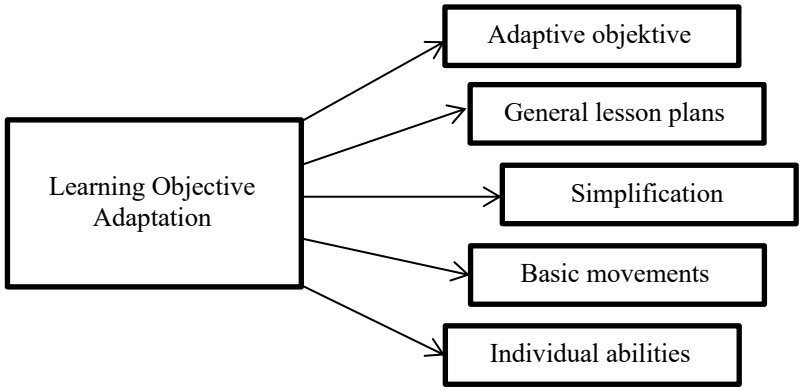

Figure 1. Learning Objective Adaptation
(Source: Primary data)

Implementing learning through simple instructions, visual support, and direct demonstrations has been shown to help students understand badminton activities (Ardiansyah et al., 2025). This approach aligns with the characteristics of students who require repetition and concrete examples to grasp movement steps (Maulidiyah, 2020). Delivering instructions in a gradual manner allows students to follow the lesson in a more structured manner, increasing their active participation and motor involvement. This strategy strengthens students' understanding of basic movements and makes the learning process more focused.

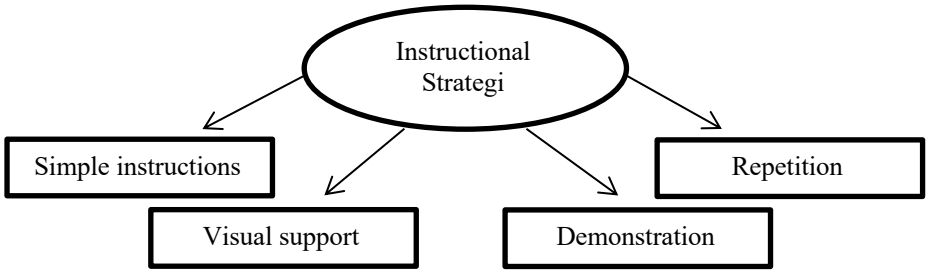

Figure 2. Instructional Strategi Dimension
(Source: Primary data)

In addition, teachers modify learning tools and environments, and implement authentic assessments to create safe, inclusive, and meaningful learning (Taufan & Fitri, 2019). Gradual support through demonstrations and direct guidance helps students develop motor skills at their own pace. This approach aligns with the principle of scaffolding, which emphasizes repeated practice, immediate feedback, and active student involvement in mastering motor skills. These modifications enable students to achieve optimal learning experiences despite their cognitive limitations (Astuti & Putri, 2024).

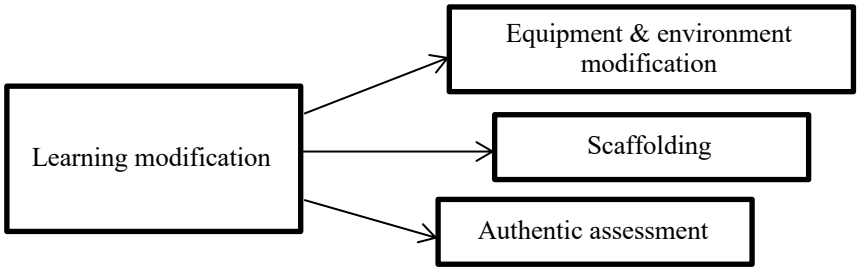

Figure 3. Learning Modification Dimension
(Source: Primary data)

Based on these findings, the success of badminton learning at SLB Negeri Mandiraja Banjarnegara relies heavily on adapted planning, appropriate teaching strategies, and a supportive learning environment (Dubey, 2024). Teachers need to develop flexible lesson plans, use appropriate instructions and demonstrations, and modify tools and environments to ensure effective learning (Rizqianti et al., 2022). With these strategies, students can actively participate, learn safely, and master basic badminton movements at their own pace.

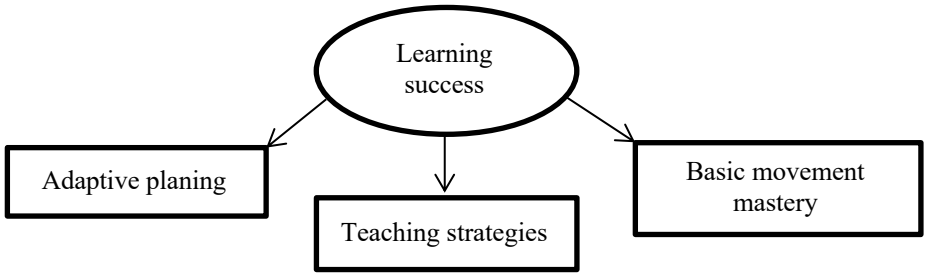

Figure 4. Learning Evaluation Dimension
(Source: Primary data)

CONCLUSION

Based on the results and discussion of this study, it can be concluded that badminton learning for students with intellectual disabilities at Mandiraja State Special Needs School requires adapted learning planning with objectives adjusted to each student's abilities to ensure effective mastery of basic badminton movements. The implementation of learning should apply simple and gradual strategies supported by direct demonstrations to enhance students' understanding, increase engagement, and encourage active participation. In addition, modifications to learning tools, equipment, and the learning environment are essential to create safe, comfortable, and inclusive conditions, allowing students to participate optimally and develop their motor skills. Learning evaluation should emphasize authentic assessment that focuses on the learning process and the gradual development of motor skills, enabling teachers to objectively monitor individual progress and provide appropriate feedback to support students' development.

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