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Improvement of Kicking Movement Results Throught Guided Discovery Style In Intellectual Students

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ABSTRACT

The purpose of this study is to analyze the improvement in the kicking movement skills of intellectually gifted students through the implementation of the Guided Discovery Style. The research method consists of two cycles. In the first cycle, the teacher teaches ball-kicking techniques using various methods, such as the inside, outside, and back of the foot. Additionally, in the second cycle, the teacher can modify the material delivery by providing students with opportunities to practice or demonstrate skills they have not yet acquired in the kicking activity. The learning strategy to enhance kicking skills is applied in the first cycle after the identification process. This study involved four third-grade students at SLB Tamanwinangun, aged between 9 and 10 years (M=9.5). The implementation of learning based on the Guided Discovery Style, particularly in adaptive physical education, has been proven to have a positive impact on the kicking abilities of intellectually gifted third-grade students at SLB Tamanwinangun, showing significant progress. The study was conducted in two stages. The results of the first cycle showed an improvement in kicking skills, although they had not yet reached the Minimum Completeness Criteria (KKM) of 75%. Therefore, corrective actions were taken in the second cycle. At this stage, the students' scores improved, with all four students meeting the Minimum Completeness Criteria (KKM) of 75%. Specifically, the scores obtained were "B" with 78%, "S" with 80%, "K" with 82%, and "M" with 88%.

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Kata Kunci

Siswa
Gerakan Menendang,
Gaya Penemuan Terbimbing
Disabilitas Intelektual

Abstrak

Tujuan dari penelitian ini adalah untuk menganalisis peningkatan keterampilan gerakan menendang siswa berbakat intelektual melalui penerapan Gaya Penemuan Terbimbing. Metode penelitian terdiri dari dua siklus. Pada siklus pertama, guru mengajarkan teknik menendang bola dengan menggunakan berbagai metode, seperti kaki bagian dalam, luar, dan punggung kaki. Selain itu, pada siklus kedua, guru dapat memodifikasi penyampaian materi dengan memberikan kesempatan kepada siswa untuk mempraktekkan atau mendemonstrasikan keterampilan yang belum mereka dapatkan dalam aktivitas menendang bola. Strategi pembelajaran untuk meningkatkan keterampilan menendang bola diterapkan pada siklus pertama setelah proses identifikasi. Penelitian ini melibatkan empat siswa kelas tiga di SLB Tamanwinangun, yang berusia antara 9 dan 10 tahun (M=9,5). Penerapan pembelajaran berdasarkan Gaya Penemuan Terbimbing, khususnya dalam pendidikan jasmani adaptif, telah terbukti memberikan dampak positif terhadap kemampuan menendang bola siswa kelas tiga berbakat intelektual di SLB Tamanwinangun, dengan menunjukkan kemajuan yang signifikan. Penelitian ini dilakukan dalam dua tahap. Hasil dari siklus pertama menunjukkan adanya peningkatan kemampuan menendang bola, meskipun belum mencapai Kriteria Ketuntasan Minimal (KKM) sebesar 75%. Oleh karena itu, dilakukan tindakan perbaikan pada siklus kedua. Pada tahap ini, nilai siswa mengalami peningkatan, dimana keempat siswa telah mencapai Kriteria Ketuntasan

Minimal (KKM) sebesar 75%. Secara rinci, nilai yang diperoleh adalah “B” dengan 78%, “S” dengan 80%, “K” dengan 82%, dan “M” dengan 88%.

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INTRODUCTION

Children with disabilities have the same rights to education as their peers. Generally, children with disabilities can engage in learning in much the same way as their typically developing counterparts. However, some may face challenges, particularly those with below-average intellectual capabilities. For children with intellectual disabilities and physical limitations, these challenges can significantly impact their learning outcomes—especially in areas such as adaptive physical education, where tasks like kicking movements are involved. Despite efforts to tailor activities to suit their needs, these children may find their physical conditions hinder their participation. Furthermore, many struggle with low achievement in adaptive education, largely due to a traditional, teacher-centered approach to learning. This method often leads to a passive classroom environment where students are not equipped with effective learning strategies that foster comprehension, critical thinking, and self-motivation. To address these issues, it is essential to implement innovative learning strategies that actively engage students in the material. Dynamic learning activities should encourage participation, and teachers must create an environment that motivates students to discover new knowledge. The K13 curriculum emphasizes the importance of applying theoretical concepts to real-life situations, moving beyond rote memorization to include complex materials that require analysis, application, and synthesis. In the context of Tamanwinangun Special School, particularly for students with mild category 3 intellectual disabilities in adaptive physical education, challenges such as monotonous lesson delivery and insufficient teacher attention have contributed to low learning outcomes. A lack of appreciation for student efforts, such as offering rewards or appropriate feedback, further exacerbates the issue. Given these challenges, it is crucial to adopt effective learning strategies. Implementing a guided discovery learning approach can significantly enhance the educational experience for students with disabilities, fostering improved outcomes in adaptive education. This approach not only stimulates engagement but also encourages students to explore and understand learning material more deeply.

Guided Discovery Style allows learners to explore solutions through structured guidance from educators, which has proven effective in supporting motor and cognitive development (Großmann & Education, 2019). Research by (Kristianto & Gandajaya, 2023) shows that this approach increases student engagement by up to 30% compared to traditional methods. This approach is also in line with Sustainable Development Goal (SDG) number 4 on quality education, which emphasizes the importance of inclusive and equitable teaching (SDGs, 2020). At the global level, attention towards children with special needs is increasingly directed towards bridging the gap in the development of

manipulative motor skills. According to a report from the American Journal of Intellectual and Developmental Disabilities (AJIDD, 2022), intervention based on targeted teaching styles can reduce motor development delays by up to 40%. Furthermore, the results of international research indicate that the active involvement of students in the learning process through exploratory teaching styles positively impacts learning outcomes (Bryce, 2021). This shows that an adaptive and student-centered approach is highly needed in special education. In Indonesia, attention to the education of children with disabilities has been regulated in Law Number 8 of 2016 concerning Persons with Disabilities. This law emphasizes the right of every child to receive equal education, including children with intellectual disabilities. In addition, Ministerial Regulation Number 70 of 2009 on Inclusive Education also encourages the development of curricula and teaching methods that are responsive to the needs of students with special needs. A study by (Kennedy et al., 2020) noted that 75% of teachers in special schools (SLB) recognize the importance of innovative teaching methods to improve student learning outcomes. The improvement of manipulative skills has become one of the important focuses in the education of children with special needs in Indonesia. According to research by (DE_Journal) & 2023, 2023), children with intellectual disabilities tend to face obstacles in performing manipulative movements that require fine motor coordination. Similar results were found in the study by (Capio et al., 2013), which stated that 68% of students in special schools experience difficulties in completing simple manipulative tasks. This fact indicates the need for pedagogical interventions that cater to their unique needs. The situation in Indonesia also shows a gap in the implementation of innovative teaching approaches. A study by (Efendi, 2018) revealed that only 20% of special schools in Indonesia actively adopt exploratory teaching methods such as the Guided Discovery Style. Additionally, data from the Ministry of Education, Culture, Research, and Technology (2023) shows that more than 60% of teachers in special schools (SLB) feel less confident in using exploratory-based teaching methods. This highlights the need for training and support for teachers in implementing effective teaching strategies. The preliminary study results of SLB Negeri Tamanwinangun on Saturday, January 4, 2024, through observation and interviews, still indicate several issues that need to be addressed to improve the kicking movement learning outcomes for students with intellectual disabilities at the school. The findings show that the school, as one of the basic education institutions in Kebumen, faces similar challenges in enhancing the kicking movement skills of its students. Initial observations indicate that most students have difficulty performing the kicking movement. Teachers at SLB N Tamanwinangun also report that traditional teaching methods are less effective in improving this skill. Furthermore, the lack of structured guidance in the learning process becomes the main obstacle in the development of students' skills. The results of interviews with teachers show that students often lose focus and motivation during learning sessions. In addition, the limited resources and training for teachers also become obstacles in adopting innovative teaching methods such as the Guided Discovery Style. Based on the above exposition, this research aims to address the challenges in kicking motion learning for students with intellectual disabilities through the application of the Guided Discovery Style teaching method. This

approach is expected not only to improve students' learning outcomes but also to provide practical guidance for teachers in designing more effective learning. Thus, this research contributes to the development of a more adaptive education model in Indonesia.

METHOD

Researchers adopted a quantitative approach through classroom action research (PTK), which is inherently collaborative. In this framework, teachers or researchers initiate actions while collaborators observe the processes involved. The study follows the action research model developed by Bellocchio et al. (2024) and consists of two cycles, each focused on four structured kicking techniques: the inside of the foot, the instep, the outside of the instep, and the outside of the foot. In the first cycle, which included four meetings, traditional methods were employed to enhance the kicking skills of four students with intellectual disabilities in an adaptive learning environment. The lessons began with the teacher greeting the students warmly and leading them in a prayer. Following that, the teacher demonstrated the kicking motions and provided clear instructions for the students to replicate them. Students who actively participated received praise, while those who did not were subject to corrective feedback. Opportunities for questions were also encouraged, and each session concluded with a prayer. Each class lasted 60 minutes, divided into a 10-minute introduction, 40 minutes of core activities, and 10 minutes for a review and assessment of students' understanding. In the second cycle, teachers were able to refine the lesson by offering additional opportunities for practice and addressing any skills that still needed development. Learning strategies for the kicking movements emerged after assessing needs in the first cycle. Students who faced challenges were introduced to the Guided Discovery Style to enhance their kicking abilities optimally. The data analysis process unfolded in several stages, following the methodology outlined by Sanjaya (2009). The first stage involved data reduction focused on the identified issues, specifically categorizing information related to kicking motor skills among students with disabilities. Data from both student observations and teacher performance were compiled into quantitative formats, sourced from pre- and post-intervention test results. In the second stage, the data was described in detail to enhance its significance, while the observation data were analyzed to provide insights into the kicking activities within the context of adaptive physical education. The analysis culminated in the third stage, which entailed drawing conclusions using the formula: Improvement = (final score - initial score) x 100%. Hypothesis testing, based on the research findings and discussions, was employed to ascertain the success of the interventions. A criterion for success was established, stating that the learning of kicking motions in adaptive physical education for students with disabilities would be considered successful only if there was a notable increase in performance, specifically if the learning outcomes met or exceeded a threshold of 75%. This threshold was aligned with the Minimum Completeness Criteria (KKM) for Physical Education, Sports, and Health (PJOK) subjects. Lastly, the learning outcomes from the kicking exercises were evaluated against pre-defined assessment categories

to determine their effectiveness.

Table 1. Criteria for Assigning Material

Mastery of the Material	Category
85% - 98%	Very Good
78% - 84%	Good
70% - 77%	Enough
65% - 70%	Less
60% - 65%	Very little

Table 2. Kicking motion assessment instrument

Indicator	Sub indikator	Distance of assessment	Achievement
Kicking motion	The arch of the foot	15 m	5-10
	Inner thigh	15 m	11-17
	Outer leg	15 m	18-21
	Outer foot arch	15 m	22-29

Note: score (3) = the ball can pass the predetermined boundary; score (2) = the ball reaches the predetermined line; score (1) = the ball approaches the predetermined distance; and score (0) = the ball does not reach the predetermined distance. Score = x 100%. Categorization of achievement according to (Purwanto, 2012), namely:

Table 3. Categories of kicking performance

Assignment level	Letter grade	Predicate
80% - 100%	A	Very Good
60% - 78%	B	Good
40% -59%	C	Enough
30% - 39%	D	Less
< 30%	E	Very little

RESULTS AND DISCUSSION

In class 3 of SLB Tamanwinangun, there are four students with intellectual disabilities who have struggled to perform kicking movements effectively. To address this, researchers implemented a practice routine using a distance of 15 meters to assess various kicking techniques, including the inner foot, instep, outer instep, and outer foot, in hopes of optimizing their performance. The objective of this research was to enhance the kicking skills of these students using the Guided Discovery Style. The findings from the post-cycle 1 assessment revealed a significant improvement in the students' kicking abilities compared to their pre-action tests. Initially, the average score for kicking skills was 49% during the pre-action assessment. This score rose to 60% in the first cycle and further increased to an impressive

82% in the second post-cycle, surpassing the Minimum Completion Criteria (KKM) of 75%. To provide a clearer insight into the achievements of the students in executing kicking movements through the Guided Discovery Style, the following table will be presented:

Table 4. Improvement in kicking motion results Pre-action and Post action

No	Indicator	Pre-Action		Post-Action 1		Improvement
		Score	Achievement	Score	Achievement	
1	‘’ B’’	46	46%	55	55%	9%
2	“S “	53	53%	59	59%	6%
3	‘’k’’	50	50%	65	65%	15%
4	‘’M’’	48	48%	60	60%	12%

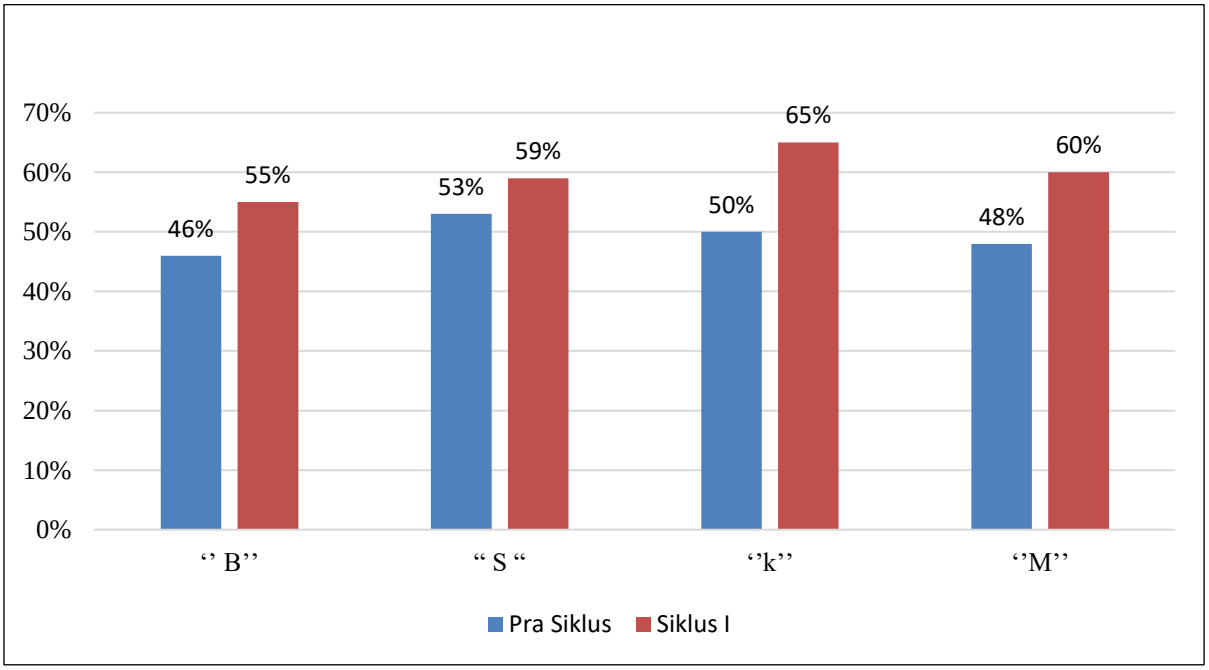

Figure 1. Results of kicking movement achievement pre-action and Cycle 1

Based on the post-test results of Cycle I, the average kicking drill test score increased by 60% compared to the pre-action score of 49%. However, the results of the steps taken in the first cycle have not yet reached the Minimum Competency Standard of 75%. No students received a score above the Minimum Competency Standard, and the results for the four recorded subjects remained below 75%. The initial supporting learning achievement results, namely the students' intellectual scores before the action and before Action I, The results are presented in the table below:

Table 5. Improvement in Course Learning Outcome Scores in Cycle I and Cycle II

No	Indicator	Post-Action I		Post-Action II		Improvement
		Score	Achievement	Score	Achievement	
1	'' B''	55	55%	78	78%	13%
2	" S "	59	59%	80	80%	21%
3	''k''	65	65%	83	83%	17%
4	''M''	60	60%	88	88%	28%

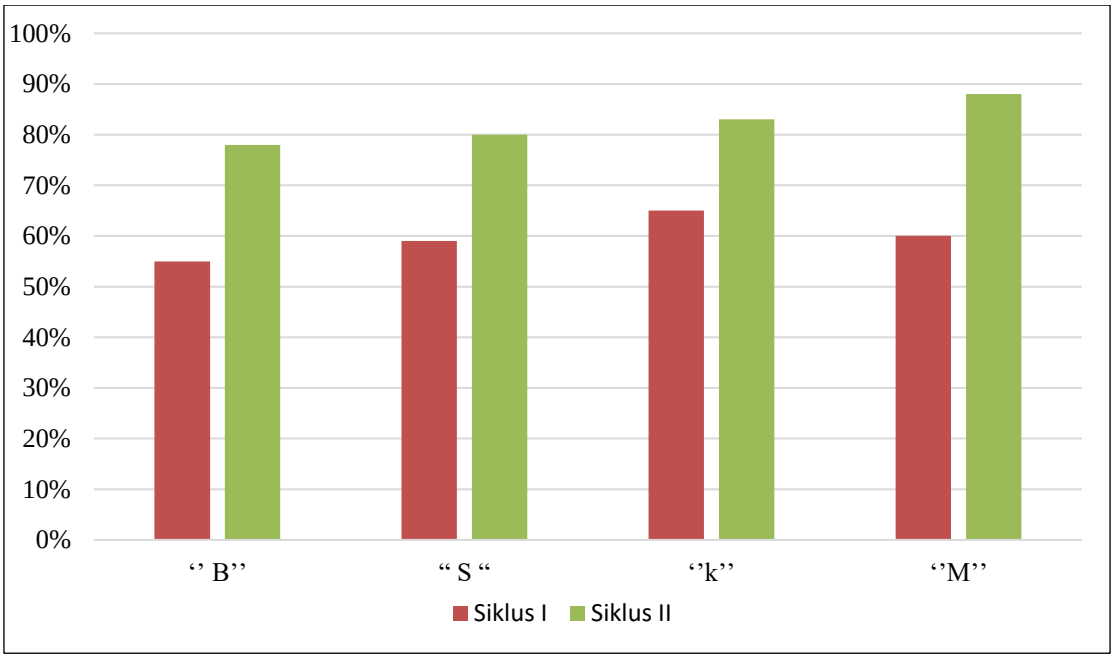

Figure 2. Results of kicking motion achievement in Cycle I and Cycle II

From the second cycle, the kicking movement ability of intellectually gifted students improved compared to the previous cycle I. The increase in kicking drill results among intellectually gifted students averaged 60% after Cycle I, rising to 82% in the second cycle. Up to four students scored above the KKM of 75%. Moreover, the scores achieved by the students showed an improvement compared to the previous test. The results are presented in the table below:

Table 6. Improvement in kicking movements in 4 grade 3 students in the Pre-Action Test, Cycle I, and Cycle II

No	Indicator	Pre-Action		Post-Action I		Post-Action II	
		Score	Achievement	Score	Achievement	Score	Achievement
1	‘’ B’’	46	46%	55	55%	78	78%
2	“ S “	53	53%	59	59%	80	80%
3	‘’k’’	50	50%	65	65%	83	83%
4	‘’M’’	48	48%	60	60%	88	88%
Average			49		60%		82%

Based on the table above, it can be seen that the average pre-action test score was 49%, which then increased to 60% in the first cycle. This indicates an 11% increase from the pre-action average. Furthermore, in the second cycle, the average score continued to rise, reaching 82%. In other words, there was a 22% increase compared to the average score in the first cycle. Additionally, the number of students meeting the Minimum Completeness Criteria (KKM) also increased. Before the pre-action stage, no students had reached the KKM, nor did they in the first cycle. However, in the second cycle, the number of students achieving the KKM increased by 22%. For a clearer illustration, refer to the graph below:

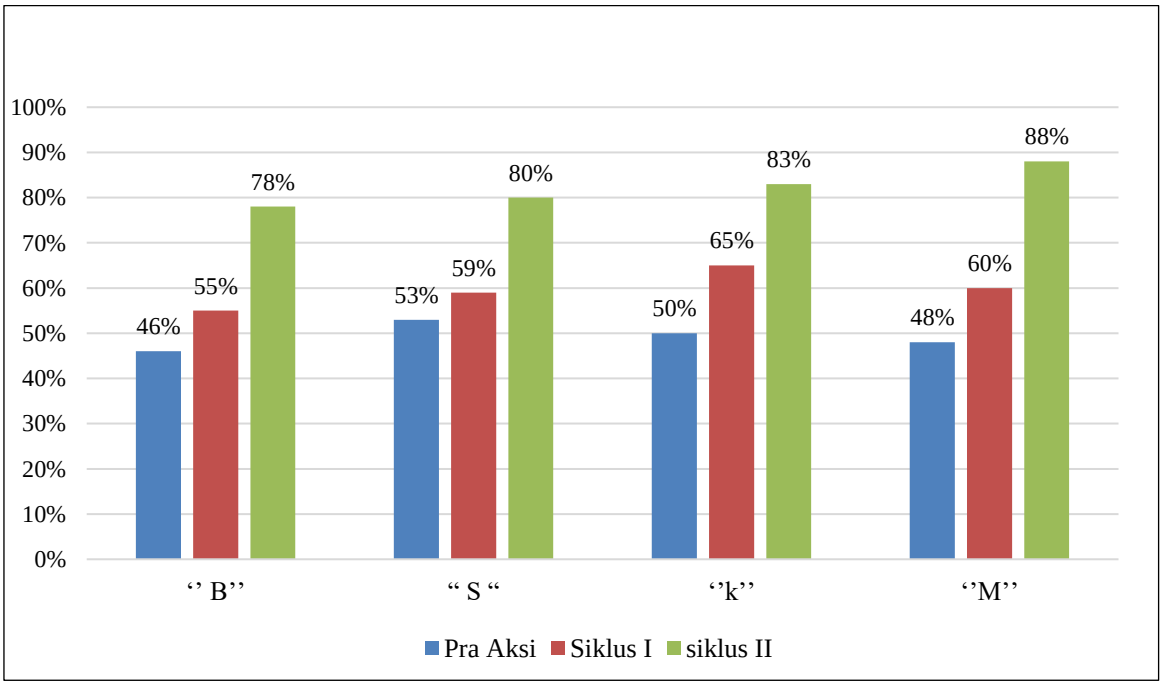

Figure 3. Results of the improvement in kicking motion before the intervention, post-cycle I, and Cycle II

The improvement in the learning outcomes of the kicking movement for third-grade intellectual students increased from the pre-action test to the second cycle. At the pre-action stage, the average score was 49%, which increased to 60% in the post-first cycle and further improved to 82% in the second

cycle. The results of the kicking motion learning test through the Guided Discovery Style indicate that students' abilities in kicking motion have improved and are satisfactory. Physical education not only helps students reach their potential in various sports but also fosters their self-confidence and cultivates life skills such as critical thinking, collaboration, communication, creativity, and aesthetic appreciation. Curriculum goals vary in each country, but they all focus on affective learning, physical activity levels, cognitive learning, and students' motor skills (Ayi Suherman, 2018). To meet the physical, cognitive, and social needs of different learners, teachers must use different TS, therefore the development of the TS Spectrum is important. Each style, with its own unique approach, specifically anatomizes different decisions in the pre-impact, impact, and post-impact decision-making sequence, offering significantly different and enriching important learning opportunities. Traditionally, physical education teachers have relied on observation as the primary method for assessing students' activity levels. However, with the latest advancements in mobile technology designed to monitor physical activity, more valid and reliable measurement tools are now available to support the documentation of student performance(Hennessy et al., 2022). Supporters of the Guided Discovery Style recommend that the aforementioned methods be prioritized for elementary school children. Research shows that both teacher-centered and student-centered methods are equally effective in developing specific skills. However, in terms of retention and transfer of learning, the student-centered approach has an advantage(Literature & 2020, n.d.). Thus, there is an inconsistency between the recommendations for the PJOK curriculum and the preferred teaching methods in the classroom. The Guided Discovery Style teaching method proposed by (*Mosston and Ashworth's Spectrum of Teaching Styles*, 1992) is part of the spectrum of teaching styles that provides students with the opportunity to develop decision-making skills through cognitive processes. In this approach, the decisions made do not come from the teacher's instructions, but rather emerge from the exploration of various alternatives obtained through different sources. A study by Arjunan and Jayachandran (2012) showed that "the retention of psychomotor skills acquired through the Guided Discovery style approach is superior compared to the command style." The Guided Discovery Style model is acknowledged to be more effective in teaching kicking movements because this method helps learners meet two important criteria in active learning. First, learners are invited to build knowledge to understand new information. Second, they are expected to integrate the latest information so that an accurate understanding is achieved (Ambasht, 2023). The application of learning through the Guided Discovery Style, especially in adaptive physical education. (Oktarifaldi et al., n.d.)This also affects the kicking movement ability of the intellectually disabled students in grade 3 at SLB Tamanwinangun, which has also improved. This research was conducted in 2 cycles.

CONCLUSSIONS

In the first cycle, there was an increase in kicking movement skills, but it did not meet the

Minimum Completion Criteria (KKM). Therefore, the next step is to continue the action in the second cycle. In this cycle, the results of the scores showed an increase, with 4 students reaching the Minimum Completion Criteria (KKM) of 75%. 'B' scored 78%, 'S' scored 80%, 'K' scored 82%, and 'M' scored 88%. This research provides recommendations for the use of other similar learning models to provide variations in learning and still maintain the optimization of learning outcomes for students with intellectual disabilities at Tamanwinangun SLB. Researchers recommend conducting future research on kicking motion to intellectual learners who have a wider scope to show how optimal intellectual learners perform kicking motion at the age of 8 to 10 years. Researchers hope that later it will affect the progress of intellectual learners in kicking motion.

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