International Journal of Health, Economics, and Social Sciences (IJHESS)
Vol. 7, No. 3, July 2025, pp. 1344~1348
DOI: 10.56338/ijhess.v7i3.8315
Website: https://jurnal.unismuhpalu.ac.id/index.php/IJHESS

Sound Learning Strategies for Phase F Students with Intellectual Disabilities in Special Needs Schools

Audina Setyawaty D. Buta[1]*, Masri Kudrat Umar[2], Dewa Gede Eka Setiawan[3]
[1,2,3]Physics Education, Faculty of Mathematics and Natural Sciences, State University of Gorontalo, Indonesia

Article Info

Article history:

Received 24 May, 2024
Revised 07 Jul, 2024
Accepted 25 Jul, 2025

Keywords:

Intellectually Disabled,
Learning Strategy, Phase F,
Physics, SLB, Sound

ABSTRACT

This study aimed to describe the implementation of physics learning on the sound topic for intellectually disabled students in phase F at Special Schools, and to find out how teachers adjusted strategies, interactions, and learning media based on students' characteristics. This research used a qualitative approach with a descriptive method. Data were collected through observation, interviews, and documentation, with validation using method triangulation. The results showed that physics learning on the sound topic was conducted in three stages: preliminary, core, and closing activities. In the preliminary stage, the teacher greeted, prayed, and gave appreciation, but the learning objectives were not clearly stated. In the core activities, the teacher used the lecture method with textbooks as the main learning resource, while the use of concrete media or technology was minimal. The interaction between teachers and students tended to be one-way, and not all students were actively engaged.In the closing stage, the teacher asked students to independently summarize the material and assigned homework as an evaluation tool. The learning strategies were mostly verbal and had not fully involved multisensory media or individual approaches tailored to students' needs.In conclusion, the teacher made efforts to adjust the learning strategies to the characteristics of intellectually disabled students in phase F. However, improvement was still needed, particularly in the use of varied learning media, fostering more active interactions, and applying more concrete and participatory learning approaches to enhance learning effectiveness.

Corresponding Author:
Audina Setyawaty D. Buta
Physics Education, Faculty of Mathematics and Natural Sciences, State University of Gorontalo, Indonesia
Author*: dataubutaaudinasetyawaty@gmail.com

INTRODUCTION

Every individual, including children with special needs, has a fundamental right to education. Research in the context of inclusive education shows that it is important to structure learning that is tailored to the characteristics of students, especially children with disabilities (Faisah et al., 2023). They need a specific educational approach so that their potential can be developed to the fullest.

Children with disabilities often experience obstacles in getting to know the surrounding environment and adjusting, such as being slow to respond or having difficulty following teachers' instructions. This has an impact on their communication skills and independence (Widiastuti, 2022). This challenge will be even greater if it is not accompanied by support in the form of appropriate media and learning strategies (Josiani, 2017). Therefore, the learning room at SLB needs to be designed adaptively so that the learning process can take place effectively and be able to accommodate the needs of students with disabilities. Learning strategies for students with disabilities require a special approach that involves various senses (multisensory). The use of concrete media such as instruments that emit sound or vibrate can help students better understand the meaning of sound (Faisah et al., 2023). By associating sounds with real objects, students are expected to be able to relate auditory stimuli to appropriate responses. For example, hearing the sound of a bell while

looking at a picture and touching the bell directly. In his literature study, Shidqi & Budi (2023) emphasizes that a multisensory approach can help students with disabilities understand reading material better, as this method involves the senses of sight, hearing, and movement simultaneously.

In addition to multisensory strategies, learning also needs to be individually adjusted. Each student with disabilities has different needs and learning abilities. Teachers need to develop flexible and adaptive methods, as well as conduct periodic evaluations of the effectiveness of the strategies used (Ramadhani et al., 2022). This is in line with Isroini et al., (2024) which emphasizes that barriers to cognitive and emotional development in children with disabilities can be minimized with appropriate and continuous learning services. stating that the strategies applied by teachers are basically similar to regular students, but the way they are delivered must be more interesting and motivating. Teachers can use visual media, individual strategies, and provide motivation on an ongoing basis. On the other hand, careful learning planning is also an important factor. (Zuhria et al,. 2021) mentioned that teachers need to compile daily journals or individual lesson plans as a guide in choosing methods, media, and strategies that are in accordance with student characteristics.

With reference to this background, this study aims to identify learning strategies used by teachers in teaching phase F disabled students in SLB. The purpose of this study is to describe the process of implementing learning as well as recognize the approach that is most relevant to the characteristics of the students. This research is expected to be able to contribute to the development of more adaptive and contextual physics learning in SLB.

METHOD

This study applies a qualitative approach with a descriptive method that aims to explore sound learning strategies applied to phase F students with disabilities at SLB Negeri Gorontalo. Data collection was carried out through two main techniques, namely direct observation of the learning process in the classroom, and interviews with special education teachers who teach students in this phase. To ensure the credibility and validity of the data, this study uses a triangulation technique. According to Soegiyono, (2015) Triangulation is a method of testing the validity of data through the incorporation of various techniques and relevant data sources. In this study, the results of observations were juxtaposed with data from interviews to see the suitability or inconsistency of information about the sound learning strategies used. This triangulation process is carried out in order to obtain a comprehensive and in-depth understanding of the phenomenon being studied.

RESULTS AND DISCUSSION

Preliminary Aspects

Several preliminary elements carried out by teachers in sound learning have an important role in creating a conducive initial atmosphere.Some of the main elements observed in the preliminary aspect of sound learning can be seen in Table 1.

Table 1 . Tree Elements in the Preliminary Aspect

Indicators	Tree Elements observed
Aspects Introduction	**Teachers prepare students with disabilities first before starting sound learning.**
	The teacher directs students with disabilities to clean the classroom so that it is more comfortable to use in learning.
	Teachers guide students with disabilities to pray together before learning activities begin
	The teacher invites students with disabilities to pray together before starting learning.
	Teachers relate the experiences of students with disabilities to the learning topics to be conveyed.

Some of the introductory elements that teachers do in sound learning reflect efforts to create a conducive learning atmosphere, such as giving greetings, inviting students to pray, and connecting the material with students' experiences. According to Stuart O'Neill (2016) The APPERCEPTION activity serves to build a bridge between the student's initial knowledge and the new material to be learned.

In practice, teachers do not always convey learning objectives explicitly. This adjustment is made based on the character of the disabled students in phase F, which generally find it easier to understand the

material if it is delivered concretely. Teachers simplify questions and use examples from everyday life, such as vehicle sounds, to help students understand sound concepts. The perception situation also shows a variation in student responses, some are enthusiastic about answering, some are passive because they do not understand the direction of the teacher's questions. Therefore, teachers apply a flexible approach so that all students can understand the material optimally. The teacher also uses simple demonstration methods, such as tapping on various objects, to make the difference in sound heard. Although some students seem more interested in this method, they still need guidance to relate the hands-on experience to the concept of sound. Students' difficulties in understanding the relationship between sound and its source show a significant difference in the level of understanding, so learning must be carried out gradually, concretely, and adaptively to the condition of each student with a disability phase F.

Core Aspects

The core activities of learning physics sound materials contain several important elements that reflect the teaching strategies applied by teachers. Some of the main elements observed in the core aspect of sound learning can be seen in Table 2.

Table 2 . Staple Elements in Core Aspects

Indicators	Observed Tree Elements
Core Activity Aspects	The teacher **writes down the topic of the material that nature is learning on the board.**
	The material is described in order according to the topic in the book.
	The material explained by the teacher **is in the form of facts and is related to daily life.**
	Learning tends to occur in 1-way communication because most students are silent and do not respond even though there are students who answer the teacher's questions.
	Teachers do not use technology and learning media in teaching and learning activities. Instead, teachers demonstrate the difference in sound by speaking at close and long distances to help students understand sound concepts.
	During the lesson, the students have not given praise or *reinforcement* directly. However, the teacher still gave a positive response in the form of gestures and attention to the participating students.
	Sound Delivery Strategy, where the teacher states that learning "focuses more on repeated verbal explanations" so that it is easy for students with disabilities to understand.
	There are students who choose to remain silent and do not give a verbal response to the questions asked.
	A student is seen falling asleep at his desk during the core learning activities.

Core learning activities are the main phase in the learning process that should be systematically designed to optimize student understanding, especially in science learning for students with disabilities phase F. According to (Atuna et al. 2024), students with disabilities need concrete-based and multisensory learning strategies to be able to understand abstract material. However, the results of observations show that the implementation of core activities by teachers has not fully referred to an approach that is in accordance with the learning characteristics of students with disabilities. The lecture method is the main approach in the core activities, with the package book as the only learning resource. The absence of technology-based learning media or concrete teaching aids reduces the possibility of students to understand the material thoroughly. (Rockhim et al., 2023) stated that visual media and real aids are indispensable in the learning of children with special needs so that information can be received more easily. Interaction during core activities is one-way, where the teacher talks more and the students respond less. According to (Yuliani & Dewantoro, 2016) Two-way communication and active question-and-answer strategies can increase the involvement of students

with disabilities in the learning process. Teachers have tried to simplify the questions, but it has not been enough to encourage the involvement of all students. The teacher has also not given Reinforcement or explicit verbal reinforcement.

Closing Aspects

The closing aspect of sound learning also has an important role in giving a strong final impression to students.Some of the main elements observed in the closing aspect can be seen in Table 3.

Table 3 . Staple Elements in the Closing Aspect

Indicators	Observed Tree Elements
Closing Aspects	**Before giving a conclusion, the teacher asks the students if they already understand the material explained.**
	The teacher does not give a direct conclusion, but facilitates the student to draw his own conclusions.
	Teachers do not provide practice questions or assignments that must be done on the spot, but rather provide homework designed to deepen students' understanding in the home environment.
	There is no prayer session that ends the lesson, the teacher only says greetings as a sign of the end of teaching and learning activities.

The closing stage in the learning of the visually impaired students phase F functions as a means of reflection, drawing conclusions, providing reinforcement, and delivering follow-up in accordance with their intellectual characteristics. Based on observations, teachers use simple language, repetition of material, and concrete teaching aids to support student understanding. The teacher guides students to draw conclusions from the material slowly, as well as provide reinforcement in the form of praise or appreciation even though the answers given by students are not entirely correct. Pakpahan et al., (2023) stated that positive reinforcement verbally and symbolically can increase the confidence and participation of students with special needs. Follow-up is carried out through home assignments that are associated with the context of daily life. However, some students still need parental help to complete the task. According to Nurida, (2019), Audio-visual media is very helpful for students with disabilities to understand the instructions more independently and effectively.

Verbal reflection is still a challenge due to the limitations of abstract thinking. In addition, there has been no use of digital media in the closing stage. Whereas (Ikrom et al., 2024) It was found that the use of visual media significantly increased the motivation and learning activity of students with disabilities.

Overall, teachers have adapted in the closing stage. However, its effectiveness can be increased by the application of more structured visual strategies, the use of interactive digital media, and an explicit approach in guiding students to summarize and internalize learning concepts.

CONCLUSIONS AND SUGGESTIONS

This study concludes that the implementation of physics learning on sound materials for phase F students with disabilities in SLB still faces various challenges, especially in terms of strategy, interaction, and use of learning media. The dominant learning is verbal with the lecture method, as well as the lack of use of visual media and technology, causing low student involvement. Interaction tends to be one-way and has not been able to encourage active participation of students, especially those who have limitations in communication and concentration skills. Although teachers have used simple language and repetition, the strategies implemented have not fully adapted to the characteristics of phase F disabled students who require a multisensory and hands-on experience-based approach. On the other hand, the learning process has not begun with the delivery of clear goals, is not equipped with ice breaking, and has not provided consistent verbal reinforcement. This condition indicates the need for improvement in the planning and implementation of more adaptive, concrete, and comprehensive learning.

Referring to the findings, teachers are encouraged to develop learning strategies that emphasize concrete, interactive, and multisensory experiences to effectively improve conceptual understanding for students with disabilities. The use of visual and audio media, including lightweight technologies such as short videos or interactive voice applications, needs to be integrated to facilitate optimal student understanding. Schools are also expected to provide learning facilities and media that support the needs of students with

disabilities, as well as provide training to teachers to be able to design friendly and effective learning.

In addition, for future researchers, it is recommended to explore the effectiveness of multisensory and technology-based approaches in science learning, especially on abstract concepts such as sound. Comparative research between conventional learning and experiential learning can also contribute to developing inclusive and applicable learning models in Extraordinary Schools.

REFERENCES

Atuna, N. Y., Yoenanto, N. H., Hendriani, W., Paramita, P. P., & Arilangga, U. (2024). The application of multisensory methods in improving reading skills in children with disabilities in inclusive schools. XYZ Journal, 10(November), 87–95.https://doi.org/10.17977/um031v10i22024p87-95

Faisah, S. N., Siregar, M. A., Firanda, N., Mujahadah, A., Musdalifa, A., & Samsuddin, A. F. (2023). The difficulty of children with special needs with disabilities in learning to recognize numbers at SLB Bhakti Pertiwi Samarinda. Proceedings of the National Seminar on Mathematics Education, Mulawarman University, 3, 34–41.https://jurnal.fkip.untan.ac.id/index.php/pmat/article/view/2464

Ikrom, F. D., Ningtas, D., Yusup, M., Guru, P., Dasar, S., & Dharmawasna, U. (2025). Literature study: The influence of use. Visual, 19, 425–442.

Isroini, S. P., & Harsiwi, N. E. (2024). The learning process of children with special needs with disabilities at SLB B and C Karya Bhakti Surabaya. Journal of Inclusive Education Citra Bakti, 2(1), 75–83. https://doi.org/10.38048/jpicb.v1i2.3820

Lucky Putri Ramadhani, Razela Regina Putri, & Vania Destriyanti, N. F. (2022). Analysis of learning strategies for children with disabilities at SLB B-C Flora Indonesia. Proceedings of the National Seminar on Education and Multidisciplinary Sciences V (SNIPMD V) 2022 ANALYSIS, Snipmd V, 29–32.

Susanti, R. (2017). Physics learning strategies for students with special needs. In Wiwin Sri Hidayati, Banu Wicaksono, Anton Wahyudi, Basuki, Khouri Hasyim, Susi Darmiastining, Wardini Dwi Wahyastyaning, Abdo Reza, Edy Setyo Utomo, & Cahyo Tri Atmojo (Eds.), Proceedings of the National Seminar on Education and Learning Research Results: "Reconstruction of Curriculum and Character-Based and Culture-Based Learning" (pp. xx–xx). STKIP PGRI Jombang.

Nurida, N. A. (2019). Audio visual aids (AVA) media in students' vocational learning. Presented to the State University of Surabaya. Audio Visual Aids (AVA) Media in Student Vocational Learning. Journal of Special Education.

Pakpahan, A. R., Ramtmingsih, N. M., Putu, N., & Pratiwi, A. (2023). Teachers' perception on giving reinforcement to students with special needs. Journal of Special Education, 6, 100–106.

Rockhim, D. A., Nenohai, J. A., Agustina, N. I., Studi, P., Chemistry, P., Chemistry, D., Malang, U. N., & No, J. S. (2023). Literature review effectiveness learning media of various applications in improving understanding of science material for mental retardation. XYZ Journal, 12(1), 37–43.

Shidiqi, T. S., & Budi, S. (2023). The use of multisensory methods to improve the reading ability of children with special needs: A literature study. Journal of Tambusai Education, 7, 22076–22079. https://www.jptam.org/index.php/jptam/article/view/10032/0

Sugiyono. (2015).Quantitative, qualitative, and R&D research methods. Bandung: Alfabeta.

Widiasuti, S. M. (2022). Psychology for children with special needs with disabilities. Journal of Social and Humanistic Education, 1(4), 1–23.

Yosiani, N. (2014). The relationship between the characteristics of children with disabilities and the pattern of learning spaces in schools is extraordinary. E-Journal Graduate Unpar, 1(2), 111–123.http://journal.unpar.ac.id/index.php/unpargraduate/article/view/1207

Yuliani, D., & Dewantoro, R. A. (2016). The effect of comic media on disciplinary behavior in children with disabilities. Journal X, 2(April), 1–9.

Zuhriya, I., & Hayudinna, H. G. (2021). Learning strategies in developing reading and writing skills for children with disabilities. Indonesian Journal of Islamic Elementary Education, 1(2), 45–58. https://doi.org/10.28918/ijiee.v1i2.4468