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DEVELOPMENT OF MATHEMATICS LEARNING MEDIA FOR RECOGNIZING FLAT SHAPES FOR GRADE VII STUDENTS WITH MILD INTELLECTUAL DISABILITIES IN SPECIAL EDUCATION SCHOOLS

Dwi Endah Pertiwi[1*], Fajar Indra Septiana[2], Eka Yuli Astuti[3], Emay Mastiani[4], Widi Pratiwi[5]

[1,2,3,4,5] Universitas Islam Nusantara, Indonesia

[*]Corresponding Email: fajarindraseptiana@gmail.com

Abstract

Children with mild intellectual disabilities experience limitations in their cognitive abilities, which can impact their academic performance, particularly in subjects such as mathematics. To facilitate comprehension for these children, it is essential to use concrete and engaging learning media. This study aims to assess the effectiveness of such media in aiding children with disabilities in learning mathematics. The research employs a descriptive qualitative method. The findings reveal that some children with mild intellectual disabilities are able to recognize geometric shapes with teacher guidance, although others continue to face challenges. The study concludes with the development of validated mathematics learning media designed to help Grade VII students with mild intellectual disabilities recognize geometric shapes using Geoboard media. The study recommends that schools provide educational props or support media to enhance mathematics instruction related to data structures. It is also suggested that teachers and parents integrate these media into every lesson for practical application, with the goal of continuous improvement in the accessibility and effectiveness of learning media for children with mild intellectual disabilities.

Keywords: Learning Media, Mathematics, Flat Shapes, Mild Intellectual Disability.

Abstrak

Anak tunagrahita ringan memiliki keterbatasan dalam hal kecerdasan yang dapat mempengaruhi kemampuannya dalam bidang akademik. Salah satunya adalah matematika. Agar pembelajaran matematika mudah dipahami oleh anak tunagrahita, diperlukan media pembelajaran yang konkret dan menarik. Penelitian ini bertujuan untuk mengetahui sejauh mana media yang digunakan dapat membantu ABK dalam belajar matematika. Metode yang digunakan dalam penelitian ini adalah metode deskriptif kualitatif. Hasil dari penelitian ini menunjukkan bahwa kemampuan sebagian anak tunagrahita ringan dapat mengenal bangun datar dengan bimbingan guru. Namun masih ada anak yang mengalami kesulitan. Simpulan dari penelitian ini berupa hasil pengembangan media pembelajaran matematika mengenal bentuk bangun datar menggunakan media Geoboard untuk anak tunagrahita ringan kelas VII yang telah divalidasi. Rekomendasi untuk sekolah agar menyediakan alat peraga atau media pendukung untuk menunjang pembelajaran matematika mengenal bentuk data dan diharapkan guru dan orang tua dapat menggunakan media tersebut dalam setiap pembelajaran untuk dipraktekkan secara langsung dan selanjutnya diharapkan dapat mengembangkan lebih baik lagi agar media pembelajaran tersebut lebih mudah diakses oleh anak tunagrahita ringan.

Kata kunci: Media Pembelajaran, Matematika, Bangun Datar, Tunagrahita Ringan

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INTRODUCTION

Education is a systematic process designed to impart knowledge, skills, values, and culture. And education knows no borders. Children with special needs also have the right to receive the same education without discrimination against their disabilities. One of the children with special needs is a intellectual diasbility. Child with intellectual disability are children who have general intellectual disorders that are significantly below average along with behavioral problems that require special education services. According to Anta (2021), mild intellectual disability children don't differ physically from children in general, but they have a slight delay in sensorimotor abilities, have difficulties in abstract and logical thinking, and find it difficult to concentrate for long periods of time. As a result of the weakness of their brain function, mild intellectual disability children have an obstacle that it is very difficult to understand a form.

In school subjects, one of the difficulties of children with disabilities is to understand mathematics subjects, where in mathematics subjects there is a discussion of different kinds of flat shapes. Flat shape material is learning that requires a rather difficult perception, especially in the form of abstract shapes. In the implementation of learning, media that are easy to understand and interesting are needed so that it can help the learning process of recognizing different kinds of flat shapes.

According to Mais (2016), learning media is one of the learning resources that can channel messages to help overcome this. Differences in learning styles, interests, intelligence, limited sensory abilities, physical disabilities or barriers due to geographical distance, time distance and others can be helped to overcome through the use of learning media. Ideally, a learning teacher should be able to accommodate all differences in learning styles, intelligence, and all limitations and obstacles by presenting learning experiences according to the interests and needs of mildly disabled children using concrete media. With the existence of concrete and real media for the delivery of learning materials, it is easier and clearer for the material to be understood by mildly disabled children. Teachers need to develop learning media that can help mild intellectual disability children understand the material. The development of learning media referred to in this study is Geoboard media as a teaching aid in the introduction of flat shapes.

Geoboard media has advantages or benefits in learning mathematics to introduce the concept of flat shapes (geometry) to be more easily understood and easily remembered by children because it has an attractive appearance, does not bore, is easy to use, practical, easy to under and can be used repeatedly. Sundayana in Liandri (2021) suggests that geoboard media has the advantage of being able to help students understand geometry building material.

geoboard media that is attractively formed can help students understand flat building material because it can provide a clear, concrete and real picture of the concept of flat buildings. In addition, with the geoboard media, students also get the space to be more active and participatory in learning, so it can give a strong impression that can increase students' interest in learning.

Based on the background found by researchers in the field, there are some children with disabilities in class VII SMPLB who have difficulty in understanding the shape of flat shapes, due to the delivery of material using media simple. The problems found are related to the learning of flat building material (Geometry), which still uses objects that are less interesting and the way of delivery, which still uses the classic method, namely the lecture method, thus making learning less interesting.

It is still difficult for children with mild disabilities to comprehend the teaching of the material using objects, because they need concrete objects to imagine the original shape of the described flat forms. Almost all the children in the class do not know the shapes of flat shapes, be it square, rectangle, triangle, circle, jajargenjang, trapezoid and so on. From the above problems, the research objectives can be identified, namely to determine the form of development of mathematics learning media to recognize flat shapes for mildly disabled children in grade VII at SMPLB.

METHOD

The appropriate research method in this research is the descriptive method. Abdullah (2018) states that descriptive research is a description designed to obtain information about the status or symptoms of a particular population or area, mapping facts based on a certain perspective (framework) at the time the research is conducted. The approach used and appropriate in this research is a qualitative approach. According to Dezin and Lincoln in Sidiq & Choiri (2019), qualitative research methods suggest that qualitative research is research that uses a natural background with the intention of interpreting phenomena that occur and is conducted by incorporating different methods available in qualitative research. The methods that are usually used are interviews, observations, and the use of documents. With a qualitative approach, researchers can meet or interact directly by observing in a real way without engineering, which produces descriptive data in the form of written or spoken words from various sources and behaviors observed in the field.

The data collection techniques used are observation, interviews, documentation, focus group discussions, and validation. The research instrument is the research itself, by going to

the field so that the research can obtain relevant data to complement the data found through observation, interviews and documentation. Data analysis techniques are carried out by reducing data, presenting data and concluding data. The activity of analyzing data in research is a core activity and in the end will get the results of research in the form of conclusions on the development of mathematics learning media to recognize flat shapes for mildly disabled children in class VII.

RESULTS AND DISCUSSION

The stages of preparation for the use of geoboard media in the learning of students with mild disabilities are: a) Teachers must analyze the characteristics of their special children, which include, among others, their initial knowledge, skills and attitudes; b) After knowing the character, the next step is to formulate the learning objectives to be achieved; c) Knowing the curriculum of the field of study; d) Relating to the media, designing, modifying and developing appropriate materials and methods; e) Finally, conducting experiments before using the media.

The given stage of implementation or presentation is a process that can lead to the stage of using media at the beginning of learning. In the process of providing learning materials, it is necessary to consider and ensure that the media and equipment are ready for use, provide an explanation of the objectives to be achieved, and try to make the learning environment conducive so that children's attention does not switch and focus only on the teacher as a teacher.

Based on the development of Geoboard learning media for children with mild deformities, which are delivered to introduce various kinds of flat shapes such as triangles, squares, rectangles, kites, circles and so on, and the material taught is adjusted based on the child's ability. Media development is developed in terms of appearance, images, coloring and uniqueness in using it and can attract children's attention to the subject matter so that children become more motivated to learn. Apart from the appearance of the development of the expansion of learning materials, in this case the development is given to children who are able to follow the material provided. The development carried out on children by providing material in the form of aspects of recognizing flat shapes as a whole using concrete media in which there are sub-aspects of mentioning the names of flat shapes seen visually, showing flat shapes by hearing instructed by the teacher, distinguishing flat shapes, grouping flat shapes and forming flat shapes directly using rubber bands on geoboard media. With the use of geoboard media that can form flat shapes in real life, mildly deaf children can practice forming flat shapes and directly understand the material of flat shapes.

CONCLUSION

From the results of the discussion, it can be concluded that the form of learning media development to recognize flat shapes, which initially still used pictures and then developed into a more interesting media called Geoboard. The current learning objectives are too broad, so they need to be developed into objectives that are tailored to the abilities and conditions of each child. The learning materials for recognizing flat shapes, which initially included only aspects of naming flat shapes, showing flat shapes, and distinguishing flat shapes, will be developed into grouping flat shapes and forming flat shapes using geoboard media. The method of implementing the learning of flat shape recognition must be added. From oral lecture and question and answer methods to practical methods so that it is more varied and not boring using geoboard media. Tools or media are adapted to the material in the form of images of flat shapes and geoboard media. The implementation of the assessment needs to be developed according to the ability and condition of the children. The evaluation should be done at the beginning of the lesson, in the third lesson and after the lesson in the form of an action test or an oral test.

The validation results of almost all validators provide positive feedback, such as suggesting to add flat shapes as examples and colors on push pins or nails in unmixed groups so that children can recognize flat shapes by color, and to reduce colors if too many will interfere with children's concentration.

REFERENCES

Abdullah (2018). *Various Methods in Education and Management Research*.Watampone. Gunadarma Ilmu. ISBN:978-602-1347-92-8.

Amka. (2021). *Learning Strategies for Children with Special Needs*. Sidoarjo. ISBN: 978-623-265-382-5.

Anta R. (2021). *Implementation of Early Reading Learning for Mild Mentally retarded Children with Vocal and Consonant Animasiteks Media in class IV SDLB CDI SLB Purworaharjo Gunung Kidul*. Yogyakarta. Journal of Teacher Training and Education Innovation. Vol 1 Number 2.

Atmaja. (2018). *Education and Guidance for Children with Special Needs*. Bandung. PT Remaja Rosdakarya. ISBN: 978-602-446-189-8.

Fadillatul & Sopandi. (2020). *Implementation of Mathematics Learning for Mild Mentally retarded Children in Grade IX at SLB Negeri 1 Limau Kaum, Tanah Datar Regency*. Padang. Journal Of Multidisciplinary Research And Development. Vol 2 Number 2.

Fitriyah & Wijayanti. (2020). *Variety of Adaptive Learning Media for Children with Special Needs. Yogyakarta*. Published by Relasi Inti Media. ISBN: 978-602-9434-85-9.

Lastrijanah et al. (2017). The *Effect of Geoboard Learning Media on Student Learning Outcomes*. Journal of Elementary School Teacher Education. Depok. Vol 4 Number 2.

Liandri. (2021). *Utilization of Geoboard Media on Flat Buildings Material for Mentally retarded Students.* Journal of Special Education.

Liandri. (2021). *Utilization of Geoboard Media on Flat Buildings Material for Mentally retarded Students.* Journal of Special Education.

Mais Asrorul. (2016). *Learning Media for Children with Special Needs*. Jombang. Eternal Library. ISBN: 978-602-72754-2-3.

Mais Asrorul. (2016). *Learning Media for Children with Special Needs*. Jombang. Eternal Library. ISBN: 978-602-72754-2-3.

Sidiq & Choiri. (2019). *Qualitative Research Methods in Education*. Ponorogo. Publisher CV Nata Karya. ISBN: 978-602-5774-41-6.

Suwandari. (2019). *Technical Reading Ability Assessment Instrument for Mild Mentally retarded Children in Grade XI at SLB Madina Serang City*. Journal of Universitas Islam Nusantara.Vol 16 No 1.

Indonesian Law No. 20 of 2003 concerning the National Education System. Jakarta.