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The Level of Dyscalculia in Children with Special Needs in Understanding Mathematical Concepts : Learning Difficulties Experienced

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Abstract: This study aims to analyze the difficulties of students with special needs (mentally retarded, deaf, and blind children) in understanding mathematical concepts, which will be described by levels. The research uses descriptive method. Data collection technique used observations of students with special needs to see the difficulties in understanding mathematical concepts (dyscalculia), and interviews conducted with mathematics teachers to complement the results of the observations. The research sample is deaf students, blind students, and mentally retarded students in the Jember district. The data analysis technique in this study uses *the flow model*. The results of this study were that the level of achievement with good assessment categories was dominated by blind students, namely from 10 aspects of the assessment only weak in the section on grouping the shape dimensions, while the deaf achieved good assessments, namely 1) sorting objects based on the length and short size, 2) understanding the number of objects, 3) understanding numbers, and 4) writing and saying numbers. Meanwhile, mentally retarded students only have 1 good assessment aspect, namely understanding the length of objects. The conclusion is that dyscalculia is mostly suffered by mentally retarded children, deaf children suffered moderate level, and the best level of the subject is blind children.

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Introduction

In learning activities carried out by students at schools, especially when learning mathematics, students consider the subject difficult to understand, thus triggering students to experience learning difficulties. These problems are common in every school, especially in special school environments. According to Mulyadi, learning difficulties are a condition in learning which is characterized by certain obstacles to achieving learning outcomes (Cahyono, 2019). There are two factors for learning difficulties in students, namely internal factors and external factors. Internal factors are factors coming from within themselves, while external factors are factors that come from outside the student/environment (Asriyanti & Purwati, 2020). One of the learning difficulties experienced by students is learning difficulties in mathematics. According to Suharmin, many problems with learning disorders in students are often found in schools to understand and achieve success in mathematics, one of which is dyscalculia (Mutiani & Suyadi, 2020). Difficulties in learning mathematics are not only experienced by normal students but also experienced by students who have special needs called ABK. ABK are those who have differences with the average child of their age or children in general; the differences experienced by ABK occur in several ways, including the process of growth and development that experiences abnormalities or deviations both physically, mentally, intellectually, socially, and emotionally (Fakhiratunnisa et al., 2022).

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According to (Dermawan, 2013) extraordinary children or called children with special needs, do not always experience problems in learning, but when they have interacted with other children of the same age in the regular education system, certain things that must get attention specifically from teachers and schools to get optimal learning outcomes.

According to Arisandi (Hermanto & Supena, 2021) learning difficulties in mathematics, or what is often known as dyscalculia, are learning difficulties experienced by children in counting. Things that cause dyscalculia in children can be influenced by phobias of mathematics, weak eyesight, inability to sequence numbers, inability to imagine, and inability to integrate knowledge and experience and understand story problems. Dyscalculia is a term used when the cause of learning disabilities lies in the cognitive development of the child itself and is of neurological origin (Kunwar & Sharma, 2020).

Dyscalculia is a condition that makes it difficult for a person to understand and perform mathematical operations effectively. According to Ramdhani, dyscalculia is a learning disorder or difficulty due to a weakness in *number skills sense*, whereas *number sense* is the ability to use and operate numbers (Kusumawaty et al., 2021). Dyscalculia is a complex condition and can affect individuals differently. A person with dyscalculia may have difficulty with basic math concepts such as counting, ordering, and distinguishing numbers. According to (Menon, 2016) children with dyscalculia show poor performance on various numerical tasks, including the assessment of magnitude and enumeration. They may also have difficulty learning the multiplication and division tables, as well as more complex mathematical operations such as fractions, percents, and decimals. Numbers for children with dyscalculia are like words without meaning, according to (Ihsan Aquil & Mohd. Ariffin, 2020). A person with dyscalculia may have difficulty understanding math concepts verbally or in writing, as well as applying them to everyday life, such as counting money or making schedules. According to (Kusumawaty et al., 2021) the inability to count is caused by disturbances in the central nervous system; often students are weak in social perception abilities, weak in the concepts of direction and time, and disturbances in their memory.

According to (Patricia & Zamzam, 2019) that students who experience dyscalculia represent weak use of immature or inefficient student problem-solving strategies, so students with dyscalculia cannot learn arithmetic properly, andthen their memory cannot remember smoothly. Dyscalculia is usually diagnosed in childhood or adolescence but can also occur in adults. Students with dyscalculia always fail in mathematics and are considered stupid or lazy; if students are not detected, they will continue to fall behind in class. Therefore, dyscalculia problems need to be identified to provide appropriate interventions and diagnoses (May et al., 2022). Dyscalculia can affect a person's ability to complete mathematical tasks in everyday life, such as counting money, managing time, or estimating distances. Treatment for dyscalculia involves an individual approach that is tailored to a person's needs and abilities. Therapy can include special math exercises, study strategies, or psychological counseling.

Difficulties during the learning process are a very natural condition experienced by every student who carries out the teaching and learning process. In general, learning difficulties are a condition that is marked by the existence of several obstacles in activities to achieve goals, so children need more effort to overcome them on their own. (Engelina, 2018). Dyscalculia is a form of learning difficulty that is characterized by students' confusion in doing calculations. In general, children who usually experience dyscalculia are students who have talent and expertise in the arts, because they tend to use their right brain to associate emotions, recognize faces, and determine objects when compared to using their left brain. (Sinaga & Julinda Simarmata, 2020). Furthermore, students with dyscalculia usually have

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difficulty distinguishing geometric shapes, number concepts, and symbols, and difficulty memorizing and doing addition, subtraction, multiplication, and division quickly.

There are several types of dyscalculia put forward by (Patricia, F.A.; Zamzam, K.F., 2019) which include (1) Quantitative dyscalculia, namely students having difficulty in calculating skills and doing calculations; (2) Qualitative dyscalculia, namely students having difficulty mastering the skills they need in performing mathematical operations such as addition, subtraction, multiplication, division and square roots; (3) Intermediate dyscalculia is the inability of students to operate mathematical symbols or numbers. Besides, students also have difficulty adding up numbers greater than 1,000,000, so they will need a help to manipulate or just read them; (4) Verbal dyscalculia, namely students having difficulty understanding the meaning of numbers, remembering number names, and/or recognizing numbers when spoken by others even though the student is able to read and write numbers; (5) Practognostic dyscalculia is students' difficulty in manipulating an object mathematically, they have difficulty in comparing numbers, or in seeing which is smaller or larger both in terms of quantity, volume or similarity both practically and systematically; (6) Lexical dyscalculia, namely students' difficulties in remembering large numbers even though they are able to read single digits; (7) Graphical dyscalculia, namely students having difficulty writing symbols and mathematical numbers in the form of numbers, symbols and others; (8) Indiagnostic dyscalculia, namely students' difficulties in remembering mathematical ideas/concepts after they have learned them; and (9) operational dyscalculia, namely students' difficulties in carrying out arithmetic operations and other calculations that require manipulation of numbers and a deeper understanding of mathematical symbols. As for the characteristics of students who have dyscalculia (Suzana & Maulida, 2019) among others (1) Having trouble understanding patterns and spatial relationships; (2) The inability to see various kinds of objects in one group and the relationships that exist between them; (3) Presence of visual-motor disassociation; (4) Perseverance, namely only focusing on one object for a long time; (5) inability to recognize and understand symbols; (6) Disorders of body appreciation; (7) Difficulty understanding language and reading; and (8) IQ is lower than verbal IQ.

In general, anyone can experience learning difficulties (in this case, dyscalculia) and children with special needs (ABK) are no exception. Children with special needs are children who need special treatment because of developmental disorders and abnormalities experienced by children (Fakhiratunnisa et al., 2022). According to Ochab & Marcin, those belonging to ABK include blind, deaf, mentally retarded, physically disabled, mentally disabled, learning difficulties, with behavioral disorders, gifted children, and children with health problems (Nora Marlim & Joni Kurniawan, 2018). But in this study, we will only discuss deaf, mentally retarded, and blind people.

Deaf is a term for someone who experiences loss or deficiency in hearing. Meanwhile, according to Language (Nofiaturrahmah, 2018), deaf children have hearing impairments; as a result, deaf individuals have speech impediments, so they are commonly called mute. Completely deaf are those who have lost their hearing either partially or completely, which causes their hearing to not function normally and properly in everyday life. Deaf in the world of education include class B students, students who have limitations or disabilities in communicating orally properly, so they prioritize written and signal communication, as well as the use of visual sensory devices as a means of communication (Syafrudin & Sujarwo, 2019). The results of the preliminary study conducted by (Nuryanti, 2019) showed that there are obstacles that occur in deaf children; the difficulty for children to think abstractly, and one of the abstract lessons taught by the teacher is mathematics. Another

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impact that occurs in the learning process of deaf children is that children's understanding is less than optimal and tend to make children happier to copy the results of their friends' work and less independence of children in doing the tasks given by the teacher.

Persons with mental retardation are extraordinary children who have intelligence and intellectual and intelligence function limitations that are significantly below their chronological age and limitations in adaptive skills which include the areas of communication, self-care, home living, social skills, community, self-control, functional academics, leisure and work Somantri (Hartariani et al., 2016). Meanwhile, according to (Saputra et al., 2020) mentally retarded children experience obstacles and retardation in intellectual mental development far below average, so they experience difficulties in academic, communication, and social tasks, thus requiring special needs education services in the curriculum of special elementary schools. Mental retardation has one of the mandatory learning materials that must be given to mentally retarded students, namely mathematics.

The definition of the blind is not only reserved for those who are blind but also includes those who can see but are limited and unable to use it to survive every day. According to Somantri, children with visual impairments have limitations or even an inability to receive stimuli or information from outside themselves through their sense of sight, the exploration of blind children is carried out by optimizing their other senses such as touch, sound, and smell (Ina Savira et al., 2019). Blind students who have little or no sight at all must study the surrounding environment by touching and feeling it. The behavior of knowing objects by listening to the sound of the object to be achieved is his behavior in development is often done to reduce the level of sensor stimulation in seeing the outside world (Kismiati et al., 2021).

This study aims to analyze the difficulties of students with special needs (mentally retarded, deaf, and blind children) in understanding mathematical concepts, which will be described by levels. The results of the description obtained are to determine the level of dyscalculia in each of the ABK students. The benefits of this study can provide an overview for class teachers at SLB to classify students in their class, so that it is easier to convey knowledge, especially mathematical concepts, to minimize dyscalculia faced by SLB students. In addition to the benefits for SLB teachers, this research has also become a reference for tertiary institutions, especially special education study programs, as material for study in determining the achievements of mathematics education courses for ABK, so that the graduates produced in the following per under is accordance with the needs of the community.

Research Method

The research uses descriptive method. The data collection technique used observations of students with special needs to see the difficulties in understanding mathematical concepts (dyscalculia), and interviews were conducted with mathematics teachers to complement the results of the observations. This research was conducted on SLB students in the Jember district. SLB students studied are mentally retarded, deaf, and blind. There are 3 research stages, namely the preliminary stage, the planning stage, and the action stage. The data collection instruments carried out in this study are shown in the table below.

Table 1. Aspects assessed

Aspect D value	Instrument	Data D observed	Respondents
The level of dyscalculia in mentally retarded children	Observation sheet Interview sheet	Dyscalculia level	mentally retarded student

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The level of dyscalculia in deaf children	Observation sheet Interview sheet	Dyscalculia level	Deaf student
The level of dyscalculia in blind children	Observation sheet Interview sheet	Dyscalculia level	blind students

Data collection technique of this this study are presented in the table below.

Table 2. Data Collection Technique

Student	Instrument	Data Collection Technique
Mentally disabled	observation	Observations were made on students to obtain information on the level of difficulty in understanding mathematical concepts for mentally retarded children
	interview	Interviews were conducted with mathematics teachers, from students with disabilities who were observed
Deaf	observation	Observations were made on students to obtain information on the level of difficulty in understanding mathematical concepts for deaf children
	interview	Interviews were conducted with math teachers, from deaf students who were observed
Blind	observation	Observations were made on students to obtain information on the level of difficulty in understanding mathematical concepts for blind children
	interview	Interviews were conducted with mathematics teachers, from observed blind students

The data analysis technique in this study used *a flow model* where the data obtained were then described by grouping so that each category can be determined based on the descriptive data as seen in the image below:

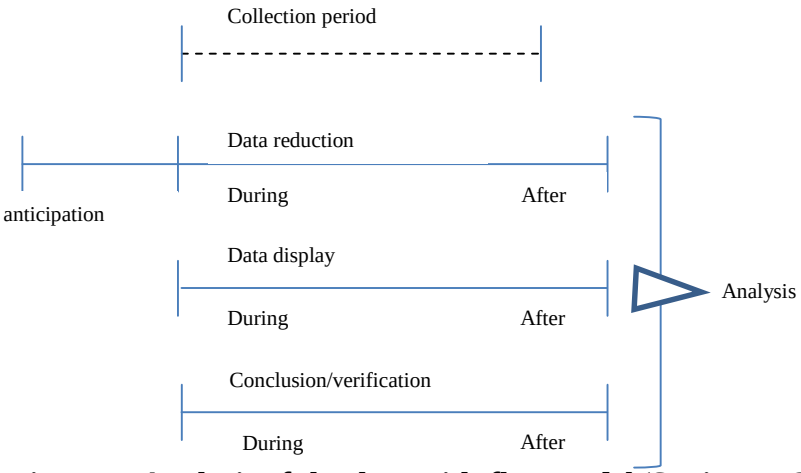

Figure 1. Analysis of the data with *flow model* (Sugiyono, 2014)

Results and Discussion

The results of this research were carried out on children with special needs; several types of children with special needs only studied mentally retarded children, deaf children, and blind children. After that, we identified each of these children with special needs. The aspects of the assessment carried out on children with special needs consisted of 10 items in the good, sufficient, and poor categories. The results of the study are presented based on the good and poor categories.

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Table 3. Good Category in Percentage

No	Assessment Aspects	Number of Subjects		
		Deaf	Blind	Mentally disabled
1	Sorts objects by size short length	53,33	66,67	47,37
2	Understanding the number of objects	60.00	100.00	36,84
3	Understand the amount of weight	20.00	66,67	15.79
4	Understand the length of objects	40.00	66,67	52,63
5	Understanding numbers	73,33	100.00	42,11
6	Write and say numbers	53,33	83,33	21.05
7	Counting objects and saying numbers	46,67	83,33	26,32
8	Mention the type of wake shape	6,67	66,67	0.00
9	Build base	13,33	66,67	5,26
10	Grouping shape dimensions	6,67	0.00	5,26

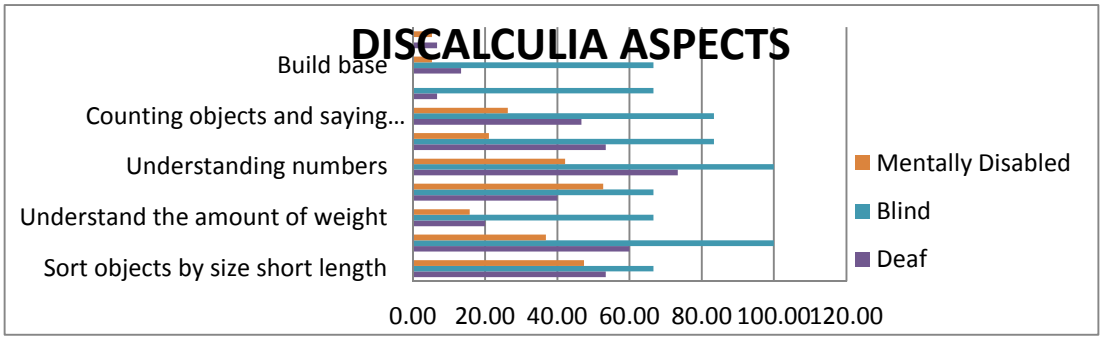

Figure 2. Good Category Assessment Aspects

From the graph above, it can be seen that in the assessment aspect 1) sorting objects based on the long-short size in blind and deaf children achieve > 50% of research subjects with good ratings, 2) understanding the number of objects in blind and deaf children reached > 50% of the research subjects with good ratings, 3) understanding the amount of weight in blind children reaches > 50% of research subjects with good judgment, 4) understanding the length of objects in blind and mentally retarded children >50% of research subjects with good judgment, 5) understanding numbers in blind and deaf children reach > 50% of research subjects with good ratings, 6) writing and saying numbers to blind and deaf children reached > 50% of research subjects with good ratings, 7) counting objects and saying numbers to blind children reaches >50% of the research subjects with good judgment, 8) mentioning the types of wake forms in blind children reaching > 50% of research subjects with good judgment, 9) the basic structure in blind children reaches >50% of research subjects with good ratings, 10) grouping the shape dimensions of all blind, deaf, and mentally retarded subjects.

Table 4. Poor Category in Percentage

No	Assessment Aspects	Number of Subjects		
		Deaf	Blind	Mentally disabled
1	Sort objects by size short length	6,67	0.00	10.53
2	understand the number of objects	0.00	0.00	31.58
3	understand the amount of weight	33,33	16,67	47,37
4	understand the length of objects	13,33	0.00	21.05

5	understand numbers	0.00	0.00	21.05
6	write and say the numbers	6,67	0.00	47,37
7	Count objects and say numbers	6,67	0.00	21.05
8	specify the type of shape	26,67	16,67	31.58
9	get up basic	26,67	16,67	26,32
10	grouping shape dimensions	60.00	33,33	68,42

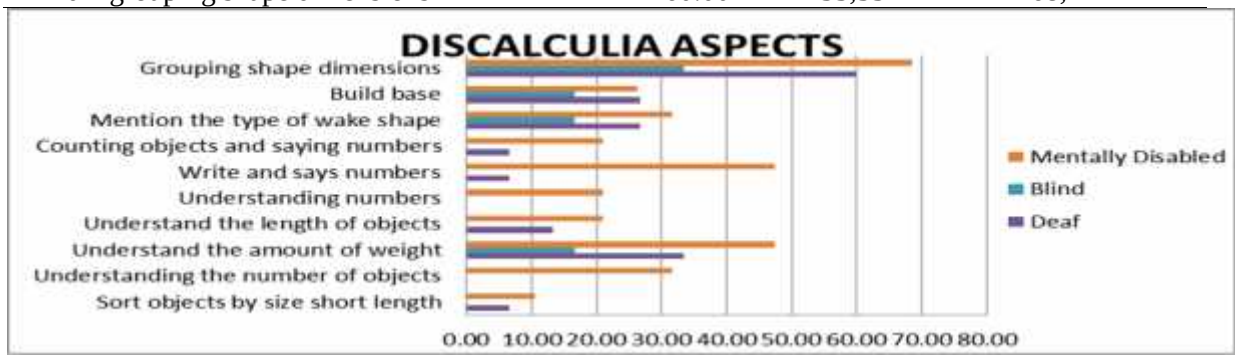

Figure 3. Poor Category Assessment Aspects

From the graph above, it can be seen that in the assessment aspect 1) sorting objects based on the long-short size in blind and deaf children and also blind <50% of the research subjects with poor judgment, 2) understand the number of objects in blind and deaf children as well as blind children <50% of the research subjects with poor judgment, 3) understanding the total weight of blind and deaf children and also blind <50% of the research subjects with poor judgment, 4) understanding the length of objects in blind and deaf children and also blind <50% of research subjects with poor judgment, 5) understanding numbers in blind and deaf children and also blind <50% of research subjects with poor judgment, 6) writing and mentioning numbers for blind and deaf children as well as blind children <50% of their research subjects with poor ratings, 7) counting objects and saying numbers to blind and deaf children and also blind <50% of the research subjects with poor judgment, 8) mention the types of waking forms in blind and deaf children and also blind <50% of the research subjects with poor judgment, 9) basic build in blind and deaf children and also blind <50% of research subjects with poor assessment, 10) grouping the dimensions of the shape in deaf and blind children reached > 50% of the research subjects with poor ratings.

The results of the study showed that the level of achievement with a good assessment category was dominated by blind students, namely from the 10 aspects of the assessment only weak in the section on grouping the dimensions of the shape, while the hearing impaired achieved a good assessment, namely 1) sorting objects based on length and short size, 2) understanding the number of objects, 3) understand numbers, 4) write and say numbers, for mentally retarded students who have 1 good assessment aspect, namely understanding the length of objects. For detail, it can be seen in the table below.

Table 5. Achievement of aspects of the assessment

No	Assessment Aspects	Deaf	Blind	Mentally disabled
1	Sorts objects by size short length	√	√	
2	Understanding the number of objects	√	√	
3	Understand the amount of weight		√	
4	Understand the length of objects		√	√
5	Understanding numbers	√	√	
6	Write and say numbers	√	√	

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7	Counting objects and saying numbers	√
8	Mention the type of wake shape	√
9	Build base	√
10	Grouping shape dimensions	

The achievement of above assessment aspects in deaf children can only achieve 4 aspects of the assessment which reach above 50%, while the other 6 aspects of the assessment do not reach 50% after we examine the 6 aspects of the assessment through strong mathematical conceptual reasoning. Besides, deaf students must also be able to think creatively to understand it. This is in line with the Ministry of National Education (Putri, 2016) that mathematics is a field of study that has a high level of difficulty because it has an abstract object, built through deductive reasoning, that is, a concept is obtained as a logical consequence of previous truths, so that linkages between concepts in mathematics is strong and clear. In addition, the results of a literature review using the VOS viewer application for deaf children from 2018 to 2020 show that deaf children cannot think creatively and cannot read, so these two things affect the social and emotional development of deaf children (Sari & Zarkasih Putro, 2021). Meanwhile, mentally retarded students have a very low level compared to deaf students and mentally retarded students. Of the 10 aspects of the assessment, only one part is achieved. According to the opinion (Saputri et al., 2017) that mentally retarded children are children who have abilities below average, experience difficulty interacting with the environment, thinking logically and focusing attention.

From the above review, the results of research on students with special needs, especially the deaf, blind, and mentally retarded, have different levels of difficulty in learning mathematics experienced students with special needs. Therefore, the principal at the special education level must pay attention to the school curriculum to enable the achievement of the expected learning objectives, so that the school curriculum has a good level of learning achievement. Learning outcomes in the school curriculum must pay attention to the division of classes according to children with special needs, while SLB teachers must modify and adapt the learning to be provided. The level of difficulty experienced by SLB students must be understood by each deaf teacher, blind teacher, and mentally retarded teacher to agree with Pamungkas & Jana (Sinaga & Julinda Simarmata, 2020) if the teacher has an understanding of the difficulties students experience, these problems will be resolved and then an individual learning program for students will be prepared. Eileen & Gylnnis (Wardah, 2019) state that individual learning programs are important to implement as a form of service for children with special needs in schools, with individual learning programs we can find out about the level of ability and development of students, including long-term goals and short term for children implemented through a special program. Where the results of this study are in the form of levels of difficulty in learning mathematics in deaf, blind, and mentally retarded children so that it can be used by SLB teachers in recognizing as early as possible the occurrence of dyscalculia in students with special needs so that it can be overcome, especially in mathematics learning.

Conclusion

Refering to the results of the study above, it can be stated that the level of achievement with good assessment categories is dominated by blind students, namely from 10 aspects of the assessment only weak in the section on grouping the shape dimensions, while the deaf achieves good assessments, namely 1) sorting objects based on the length and short size, 2) understanding the number of objects, 3) understand numbers, 4) write and say numbers.

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Meanwhile, mentally retarded students only have 1 good assessment aspect, namely understanding the length of objects. The conclusion is that dyscalculia is mostly suffered by mentally retarded children, deaf children suffered moderate level, and the best level of the subject is blind children.

Recommendation

From the results of this study, it is suggested that ABK teachers develop studies on research on children with special needs in learning mathematics difficulties in classes other than the blind, deaf, and mentally retarded.

References

Asriyanti, F. D., & Purwati, I. S. (2020). *HASIL BELAJAR MATEMATIKA SISWA KELAS V SEKOLAH DASAR*. *29*(1), 79–87.

Cahyono, H. (2019). Faktor-Faktor Kesulitan Belajar Siswa Min Janti. *Jurnal Dimensi Pendidikan Dan Pembelajaran*, *7*(1), 1. https://doi.org/10.24269/dpp.v7i1.1636

Dermawan, O. (2013). Strategi pembelajaran bagi anak berkebutuhan khusus di slb. *Psympathic, Jurnal Ilmiah Psikologi*, *6*(2), 886–897. https://journal.uinsgd.ac.id/index.php/psy/article/view/2206/1536

Engelina, N. (2018). *Analisis Kesulitan Belajar Siswa Tunagrahita Ringan dalam Pembelajaran Matematika di Sekolah Luar Biasa Kembar Karya Pembangunan 3 Bekasi*.

Fakhiratunnisa, S. A., Pitaloka, A. A. P., & Ningrum, T. K. (2022). Konsep Dasar Anak Berkebutuhan Khusus. *Masaliq*, *2*(1), 26–42.

Hartariani, L. L., Damayanthi, L. P. E., Wirawan, I. M. A., & Sunarya, I. M. G. (2016). PENGEMBANGAN MEDIA PEMBELAJARAN 3 DIMENSI PADA MATA PELAJARAN MATEMATIKA UNTUK SISWA PENYANDANG TUNAGRAHITA (Studi Kasus: Siswa Kelas D2/Semester 2 SLB C Negeri Singaraja). *Jurnal Pendidikan Teknologi Dan Kejuruan*, *13*(2), 137–147. https://doi.org/10.23887/jptk.v13i2.8522

Hermanto, H., & Supena, A. (2021). Analisis Pelaksanaan Pembelajaran Matematika Pada Siswa Dyscaculia di Sekolah Dasar. *Jurnal Basicedu*, *5*(3), 1329–1340. https://doi.org/10.31004/basicedu.v5i3.932

Ihsan Aquil, M. A., & Mohd. Ariffin, M. (2020). The Causes, Prevalence, and Interventions for Dyscalculia in Malaysia. *Journal of Educational and Social Research*, *10*(6), 279–289. https://doi.org/10.36941/jesr-2020-0126

Ina Savira, S., Wagino, & Laksmiwati, H. (2019). APA YANG BERBEDA? KEMAMPUAN KOGNITIF PADA ANAK TUNANETRA TANPA PENGALAMAN VISUAL (CONGENITAL VISUAL IMPAIRMENT). *Jurnal Pendidikan Inklusi*, *3*(1), 20–39.

Kismiati, R. N., Muslih, M., Pramesti, S. L. D., & Mahmudah, U. (2021). Penerapan Metode Drill Pada Mata Pelajaran Matematika Pada Anak Berkebutuhan Khusus Gangguan Penglihatan (Tunanetra) di SLB Negeri 1 Pemalang. *IBTIDA- Jurnal Kajian Pendidikan Dasar*, *1*(2), 50–59. https://doi.org/10.33507/ibtida.v1i2.330

Kunwar, R., & Sharma, L. (2020). Exploring Teachers' Knowledge and Students' Status about Dyscalculia at Basic Level Students in Nepal. *Eurasia Journal of Mathematics, Science and Technology Education*, *16*(12), em1906.

Kusumawaty, M., Trapsilasiwi, D., Murtikusuma, R. P., & Hobri, H. (2021). Proses Berpikir Siswa Diskalkulia dalam Menyelesaikan Soal Cerita Perbandingan Berdasarkan Langkah Polya. *Absis: Mathematics Education Journal*, *3*(2), 57.

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May, Y. S., Beram, S., Gengatharan, K., & Amat, A. (2022). *A Survey on Problems of Dyscalculia in Primary Schools*. *1*(2), 30–38. https://doi.org/10.53797/icccmjssh.v1i2.4.2022

Menon, V. (2016). Working memory in children's math learning and its disruption in dyscalculia. *Current Opinion in Behavioral Sciences*, *10*, 125–132.

Mutiani, R., & Suyadi, S. (2020). Diagnosa Diskalkulia Generasi Alpha: Masalah dan Perkembangannya. *Edumaspul: Jurnal Pendidikan*, *4*(1), 104–112. https://doi.org/10.33487/edumaspul.v4i1.278

Nofiaturrahmah, F. (2018). Problematika Anak Tunarungu dan Cara Mengatasinya. *Quality*, *6*(1), 1–15.

Nora Marlim, Y., & Joni Kurniawan, W. (2018). PERANCANGAN SISTEM PAKAR UNTUK MENENTUKAN KELAS PADA ANAK BERKEBUTUHAN KHUSUS DENGAN METODE FORDWARD CHAINING. *(JOISIE) Journal Of Information System And Informatics Engineering*, *2*(2), 7–15.

Nuryanti, R. (2019). Penggunaan Model Pembelajaran Kooperatif dengan Strategi Team Games Tournament (TGT) untuk Meningkatkan Hasil Belajar Matematika pada Materi Bilangan Romawi bagi Siswa Tunarungu Kelas IV SDLB. *Jurnal Asesmen Dan Intervensi Anak Berkebutuhan Khusus*, *20*(1), 40–51. https://ejournal.undiksha.ac.id/index.php/JET/article/view/21734

Patricia, F. A., & Zamzam, K. F. (2019). Diskalkulia (Kesulitan Matematika) Berdasarkan Gender Pada Siswa Sekolah Dasar Di Kota Malang. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *8*(2), 288. https://doi.org/10.24127/ajpm.v8i2.2057

Putri, T. O. (2016). Penggunaan Media Pemblajaran Benda di Sekitar Anak Terhadap Kemampuan Membandingkan Dalam Pembelajaran Matematika Bagi Siswa Tunarungu Kelas II SLB. *Jurnal Pendiidikan Khusus*, 1–8.

Saputra, V. H., Darwis, D., & Febrianto, E. (2020). Rancang Bangun Aplikasi Game Pengenalan. *Jurnal Komputer Dan Informatika*, *15*(1), 171–181.

Saputri, S., Ningsih, E. F., & Widyawati, S. (2017). Analisis Kesulitan Anak Tunagrahita Dalam Menyelesaikan Soal Operasi Penjumlahan Di Sekolah Luar Biasa (Slb) Harapan Ibu Metro. *MaPan*, *5*(2), 187–200. https://doi.org/10.24252/mapan.v5n2a3

Sari, N., & Zarkasih Putro, K. (2021). Assistance and Learning Strategies for Deaf Children. *JOYCED: Journal of Early Childhood Education*, *1*(1), 39–52.

Sinaga, F., & Julinda Simarmata, E. (2020). Media Gambar Terhadap Diskalkulia Di Sekolah Dasar. *Jurnal Tunas Bangsa*, *7*(2), 219–234. https://ejournal.bbg.ac.id/tunasbangsa/article/view/1135/1029

Sugiyono. (2014). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (20th ed.). CV. Alfabeta. www.cvalfabeta.com

Suzana, Y., & Maulida, I. (2019). Mengatasi Dampak Negatif Diskalkulia Dalam Menyelesaikan Masalah Matematika. *Logaritma: Jurnal Ilmu-Ilmu Pendidikan Dan Sains*, *7*(01), 15. https://doi.org/10.24952/logaritma.v7i01.1661

Syafrudin, T., & Sujarwo, S. (2019). Pengembangan Bahan Ajar Untuk Pembelajaran Matematika Bagi Siswa Tunarungu. *Suska Journal of Mathematics Education*, *5*(2),

Wardah, E. Y. (2019). Peranan Guru Pembimbing Khusus Lulusan Non-Pendidikan Luar Biasa (Plb) Terhadap Pelayanan Anak Berkebutuhan Khusus Di Sekolah Inklusi Kabupaten Lumajang. *JPI (Jurnal Pendidikan Inklusi)*, *2*(2), 93. https://doi.org/10.26740/inklusi.v2n2.p93-108