Overview of Learning Disabilities in Mathematics and Suggested Remedy to Re-Track Affected Children to Classroom Activities

Olagoke Michael (Ph.D.)
Department of Science Education, Bamidele Olumilua University of Education, Science and Technology, Ikere, Nigeria

ABSTRACT

The condition of learning disabilities in Mathematics is a universal problem that occurs in all languages, cultures and nations in the world. The study targeted normal children who seem to have normal intelligence in all other areas of studies but have severe difficulties in learning Mathematical and solving Mathematical problems. The signs and causes of learning disabilities were discussed, it was discovered that learning disabilities in Mathematics is a problem that are intrinsic to individual children which could be due to central nervous system of dysfunction, dyscalculia, dyslexia and development of aphasia that resulted to heterogeneous group of disorders that manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning of Mathematical concepts and abilities. Children have different patterns of learning strengths and weakness; there is no specific profile that describes all children. Learning disabilities in Mathematics may occur concomitantly with other handicapping conditions, whereas, there are some children who are physically challenged, yet they are mathematically sound. Emotionally disorders or physically challenged of a child may not be a hindrance to his\her cognitive psychological development. This study considered the extent to which peer tutoring can usefully rehabilitate children with learning disabilities in mathematics to normal classroom situation in Nigeria. The study also considered children with learning disabilities in Mathematics by peering them with children who are mathematically sound. Calculation and reasoning are the affected areas of children with learning disabilities in mathematics. Teachers need a variety of strategies for teaching mathematics concepts, skills, and problem solving to rehabilitate children with learning disabilities to normal classroom situation.

KEYWORDS

Cognitive psychological development, difficulties, disabilities, tutee, handicapping, intrinsic, maturation

I. INTRODUCTION

The condition of learning disabilities is a universal problem that occurs in all languages, cultures and nations in the world. Accumulative research shows that in all cultures, there are children who seem to have normal intelligence but have severe difficulties in learning oral language, acquiring intelligence in reading, writing skills or solving mathematics problems (Kronick1995). Learning disabilities according to National Joint Committee on Learning Disabilities (NJCLD), is a general term that refers to heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening,

speaking, reading, writing, reasoning or mathematical abilities. Hobri et al., (2021), classified mathematics learning disabilities as low arithmetic skills and poor working memory.

These disorders are intrinsic to the individual and presumed to be due to central nervous system of dysfunction, Problems in self-regulatory behaviours, social perception and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Even though, a learning disability may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, social and emotional disturbance/environmental influence, such as cultural differences, insufficient/inappropriate instruction, psychogenic factors) however, learning disabilities in a child is not as a result of these conditions or influences mentioned. (NJCLD on Learning Disabilities, 1994, pp 65-66). The most observable of the definition is that learning disabilities may occur along with other disabilities or conditions. We should not mince words here someone who has learning disabilities has nothing to do with his/her emotional disorders. Individuals can have several problems at the same time have learning disabilities or emotional disorders. The investigations of the complex problems of learning disabilities is traceable to substantial reforms in theories and instructional practices of developmental behavioural Psychology and Cognitive Psychology. According to keat & Ismail. (2017), cognitive development could be referring to the development of knowledge and acts of knowing, such as observing, remembering, problem-solving, reasoning and understanding. What decides if a student have MLD or not depends on a combination of factors such as genetics, neurological impairments, and the actual environment in which they are educated and students with identifiable with biological characteristics (Lee & Lee, 2020)

Jean piaget argued that, a key notion in developmental psychology is that, the maturation of cognitive skills or thinking follows a sequential progression which indicates that an individual Child’s ability to learn depends on his or her current maturational status. This theory implies that attempts to speed up or bypass the developmental process may actually create problems. Bender (1957), Opinioned that each individual has a present rate of growth for various human functions, discrepancies among the various abilities, indicate that the abilities are maturity at different rates with some abilities lagging in their development. Maturational lag which means slowness in specific aspects of neurological development which may be sometimes temporary. Thus many children with learning disabilities are not so different from children without them; rather, it is more a matter of timing.

Koppitz (1973), concluded that students with learning disabilities were immature and poorly integrated, they needed more time to learn and grow up while Silver and Hagin (1991 and 1966) conducted a long-term study and initially found evidence of maturational lag in young children. Levine (1987), Levine and Swartz (1995) described how neurodevelopment variations in students with learning disabilities and learning disorders lead to academic failure. Levine and his colleagues emphasize the importance of recognizing developmental variations in children and providing instruction to ameliorate them.

As students with learning disabilities are increasingly placed in the regular education classroom, it is important to develop methods, to facilitate the partnership between general and special education. To facilitate a better teaching to cater for individual differentials among regular students and students with learning disabilities. Learning disabilities has become an established discipline; the condition of having a learning disability has wide recognition and general acceptance but researchers are not doing much research work to

provide solution to this academic difficulty. Swanson and Christie (1994) found that children and adults, experts and novices, all had an implicit notion of what constitutes a learning disability. Many disciplines, professional organizations, and nations are now identifying individually with learning disabilities. It should be noted that learning disabilities should be seen as a single condition. That is the reason why finding a specific or single acceptable definition may not be unfeasible. The problems of learning disabilities are intrinsic to individual and the solutions applied to those individual problems must be adaptive and flexible to change as individual develops.

Keogh (1994) said that learning disabilities is not a single condition but rather a class of related and partially overlapping conditions. To cater for individual differences who have disabilities in learning or children who cannot fix to normal classroom situation as a resort of his/her inabilities to learn as other children will do. Different definitions are required for various professions, age, levels and degree of varieties. Different definition will serve different purposes.

Possible teaching strategy that is capable to rehabilitate children with learning disabilities in Mathematics to normal classroom situation could be a Peer tutoring which is an effective method of providing one-to-one instruction in general education classrooms. Two student's works together, the tutor is the student's teacher and the tutee is the learner. Olagoke, (2015) argued that the peer tutor helps the target student (or tutee) to learn, practice or review an academic skill such as saying, writing, identification of mathematical symbols, spelling words, reading sentences and solving mathematical problems.

An incidental advantage of peer tutoring on teaching students with learning disabilities in mathematics is that the tutor serves as a model of appropriate academic and non-academic behaviours. This method of teaching foster opportunities for building social relationships within the classroom according to Olojo (2015). Peer tutoring is based on the belief that the targeted student is able to learn more effectively from a fellow student. The tutor is also advantageous because the best way to learn mathematics is to teach it. Olagoke (2015) and Slavin (1991) argued that peer tutoring is simple to implement, it requires little time and effort from teachers which permits teachers to use their skills efficiently in a practical way to meet the special academic needs of a few children in a class with mathematical learning disabilities. However, there are number of characteristics of learning disabilities that affects both qualitative and quantitative learning such as problems in spatial relationships, visual perceptions, symbol recognition, language and communication abilities, memory, graphomotor skills and cognitive strategies (Johnson, 1995; Pennington, 1991). Geary and Hoard, 2005, as posited by Karagiannakis et al, 2014, three key subtypes of deficits of students with mathematics disorder:

- Procedural (left hemisphere), in which children present a delay in acquiring simple arithmetic strategies, which may be a result of verbal working memory deficits, but also deficits in conceptual knowledge.
- Sematic memory (left hemisphere), in which children show deficits in retrieval of facts because of a long term memory deficit.
- Spatial (right hemisphere), in which children show deficits in the spatial representation of number.

II. IDENTIFICATION OF LEARNING DISABILITIES IN MATHEMATICS

Learning disabilities in Mathematics are multifaceted and far-reaching depending on the nature of individual children. The following are identified disabilities in Mathematics.

A. Dyscalculia

The term dyscalculia is a medically oriented word that describes a severe disability in learning mathematical concepts and computation which is associated with a central nervous system dysfunction. Dyscalculia is a Greek and Latin word where calculia means to count badly, this is a specific learning disability in Mathematics. Students need strategies for issuing the problem from knowing what is being asked and for deciding on methods for solving the problems. Research shows that students with learning disabilities often use no strategies or select an inappropriate strategy to solve any mathematical problems, these set of students may be showed to develop and apply wrong strategies for remembering and retrieving information but if they are provided with right instruction through its peer they can acquired and use mathematics learning strategies successfully (Deshler et al, 1996; Lenz, Ellis, and Scanlon, 1996; Miller, 1996; Hutchinson, 1993; Rivera, 1973) for success in Mathematics, the learning of computation operations is important as understanding the required strategies. The computational facts of adding subtracting, multiplying and dividing must become automatic. Dyscalculia is not the same as Mathematics anxiety but people with dyscalculia can react strongly to activities involving mathematics.

They may get upset or frustrated when playing board games. Children with dyscalculia may have difficulties in understanding of numbers related concepts or using symbols or functions needed for success in mathematics. The challenges can also create difficulties in daily life. Dyscalculia is a lifelong condition that make it hard for some children to perform mathematics related tasks which is similar to dyslexia. Children with this learning issue have trouble with many aspects of mathematics, they often do not understand quantities or concepts like biggest vs smallest. They may not understand that the numeral 7 is the same as the word seven which is called number sense. Children with dyscalculia also have trouble with the mechanics of doing mathematics, such as being able to recall mathematics facts. They may understand the logic behind mathematics but not how or when to apply what they know to solve Mathematics problems. They also struggle with working memory, for example, they may have problem or find it difficult to hold numbers in mind while solving problems with multiple steps. Dyscalculia goes by many names, some school refer to it as a mathematics learning disability, and doctors sometime call it a mathematics disorder, while we may even hear children and parents call it mathematics dyslexia.

B. Signs and Symptoms Dyscalculia

Dyscalculia can cause different types of mathematics difficulties, which are intrinsic to individual children. Observing your child and taking notes to share your observation with teachers and doctors will enable them to find best strategies and supports for such child. Dyscalculia varies with different ages. It tends to become more apparent as kids get older, but symptoms can appear as early as preschool.

- Children having troubles in learning how to count, skips over numbers long after kids of the same age andcan not remembers numbers in the right order.

- Children struggling to recognize patterns such as smallest to largest or tallest to shortest.
- Children having trouble to recognize number symbols (knowing that "9" means nine).
- Children who find it difficult to understand the meaning of counting numerals, for example, when asked for four blocks, he/she just hands you an armful rather than counting them out.
- Children who often find it difficult to recall basic mathematics factors such as 3+2 = 2+3 = 5 and solve correctly
- Children who struggles to identify the four arithmetic symbols/signs (+,-,x,÷)
- Children who struggle to understand words related to mathematics such as greater than and less than most especially when the symbols are involved

C. Dysfunction

Dysfunction is regarded as central nervous system, although not always stated directly, as it implies with the view that learning disabilities in Mathematics are related to neurological functions such as function of the cranial nerves (including vision), strength, coordination, reflexes, and sensation. All learning originates within the brain and consequently, learning disabilities in Mathematics can be caused by a dysfunction in the central nervous system. Educational, genetic factor, environmental, school made problem and examination oriented curriculum can of course, modify the process of learning and influence brain function, making it worse or better to acquire knowledge in mathematics. It is difficult if not impossible to ascertain by medical examination or external medical tests the neurological condition of any child. Dysfunction of the central nervous system is therefore often presumed and determined through observation of behaviour. To identify a child who has dysfunction. This can be done either through a specialist Physician, paediatrician, and Paediatric neurologist or through child psychiatrist.

The neurological examination of child suspected of having learning disabilities has two distinct components. The conventional neurological assessment and the examination for soft neurological signs, which could be minimal or subtle neurological deviations such as coordination difficulties in visual-motor, fine motor, or gross motor activities. Although a carefully performed and judiciously interpreted neurological examination cannot answer all a questions, it can only contribute to the understanding of the functional status of a child with learning disabilities in mathematics. Levine (1987) warns, however, the parents and schools should not have unrealistic expectations about the results of neurological examinations. A conventional neurological examination will not reveal many soft signs and will probably fail to find any abnormalities in children whose primary complaint is the inability to learn (Rapkin, 1995; Levine, 1987). Scherer, et al. (2016) observed students with MLD experience are addressed to have perceptual (counting and memorizing) and theoretical (place value and classifying) challenges.

D. Dyslexia

Dyslexia is one of several distinct learning disabilities. It is a specific language-based disorder of constitutional origin characterized by difficulties in single word decoding usually reflecting insufficient phonological processing abilities. The slight disorder of the brain that causes difficulty in reading and spelling but at times it does not affect intelligence.

Dyslexia could cause a child to be disabled in reading and studying any mathematical concepts. If a child is unable to read or identify any mathematics note, to interpret the concept will be difficult.

Genetic factor, brain-injury (which could occur during or shortly after birth), Environmental deprivation (such as malnourished, lack of early environmental stimulation), accident (skull fracture) and infections (chicken pox, missiles, malariasetc) are the major causes of dyslexia which often unexpected in relation to age and other cognitive and academics abilities.

E. Aphasia

According to oxford dictionary is loss of the ability to understand or produce speech because of brain damage. It is typically refers to cerebral palsy which is a neuromuscular disability caused by injury to the brain either before or after birth which affect the production or comprehension of speech and the ability to read and writer. It is always as result of injury of the brain, most commonly from a stroke in older individuals. It may be mild with little functional limitations moderately affecting walking, communication and self-help skills, or severe to the extent to total disability. Aphasia as acquired communication disorder that impairs a child's ability to process language, but does not affect intelligence but brain injuries resulting in aphasia may also arise from head trauma, brain tumours, infections and disorder that get worse over/time.

Aphasia is a language disorder that happen when a child have brain damage. Brain has two halves, language skills are in the left half of the brain in most people while damage on the right side may cause other problems, like poor attention or memory. Aphasia may cause a child to have muscle weakness in the mouth called dysarthria. A child may also have trouble of getting the muscles of his/her mouth to move the right way to pronounce words called apraxia. A child can also have swallowing problems called dysphasia.

F. Signs of Aphasia

1. Problems associated with talking:

- Can't think of the words you want to say
- Say the wrong word, sometimes you may say something related like "fish" instead of "Chicken" or a child might say "399" instead of "366".
- Put made-up words and read words together into sentences that do not make sense.
- Problem associated with thinking:
- Not understand what others say which may happen when they speak fast such as on the news having problem with long sentences in mathematics theories, hypotheses and questions.
- Find it hard to understand what mathematics teachers or classmates say when it is noisy or in a group work.

2. Problem associated with reading and writing:

- Inability to read questions, books and computer screens.
- Having trouble to spell and putting words together to write sentences or connecting symbols together most especially mathematics questions that requires definitions, proofs, axioms, formula to arrive at the solution.

Activities required for rehabilitating children with learning disabilities in mathematics to normal classroom situation.

Through the peer tutoring strategy, children with learning disabilities in mathematics can learn through the following principles:

3. Teach Precursors of Mathematics Learning

It is very important to check into the previously acquired knowledge of any child with LD to ensure that the child is ready for what needs to be learned. It is important to note that, time and effort invested to reliabilities in building a firm foundation can prevent many later differences in learning. Some of the following basic pre-number learning's are essential (Bley and Thornton, 1989) and if they are lacking, they must either be taught or revised.

- Matching (concept of "same" and grouping of objects).
- Recognizing groups of objects (recognizing a group of three without counting)
- Naming of numbers that comes after a given number (being able to state, for example, that 9 comes after 8 and 101 comes after 100).
- Writing numerals from 0 to 10 (it is important to get the sequence correctly, overcoming reversals and distortions).
- Measuring and pairing (estimating and fitting objects, one-to-one correspondence).
- Sequential values (arranging like objects in order by quantitative differences).
- Relationships of parts to whole and parts to each other (it involves experimentation with self-correcting materials to discover numerical relationship).
- Operations (manipulation of the numbers facts to 10 without reference to concrete objects).
- The decimal system (learning the system of numeration and notation beyond 10 and base 10).
- Written calculation, especially where position is important (e.g. Borrowing/carrying), (Sauces et al,. 2013)

4. Progress from the Concrete to the Abstract

Children can best understand a math concept when teaching progresses from the concrete to the abstract. A teacher should plan three instructional stages: Concrete, representational and abstract. (Miller, 1996; Harris et al 1995). It is advisable for any educational institutions to have a mathematics laboratory where students can learn and see mathematics concepts. In the concrete instruction stage, the students manipulate real objects in learning the skill. For example, the student could see, hold, and move two stones and three stones to learn that they are equal to five stones.

In the representational stage; a graphic representation is substituted for actual objects. In the following example; circles represent objects in an illustration like

OO+ OOO = OOO = 5

Finally, at the abstract level, numerals finally replace the graphic symbols.

2+3 =5

5. Provide Opportunity for Practice and Review

Children need many opportunities for review drill and practice to over learn the math concepts, since they must be able to use these concepts almost automatically. The peer groups are provided with worksheets, flash cards, games, behaviour management techniques (such as rewards for work completed and if possible computer practice (special software programs that give immediate feedback) or manual solutions to required mathematics concepts.

6. Teach Children to Generalize to New Situations

Through peer tutoring, the tutor must teach the tutee to learn to generalize a skill to many situations. Through these divergent solutions to a specific problem, the tutee will be able identify which method will be appropriate to address the question. The goal is to gain skill in recognizing computational operations and applying them to various new situations.

7. Teach Mathematics Vocabularies, Axioms and Theories

The vocabularies, axioms, theories, principles and concepts of mathematics are new and must be learned. Through the peer tutoring, the tutee may know the operation to mathematics concepts.

8. Consider the Student's Strengths and Weakness

The tutor must understand the children's abilities and disabilities in mathematics operations for example in the four arithmetic operations (+,-, ÷, x) that the tutee can be tutored.

Operation	Terms
Addition (+)	4 → addend
	+7 → addend
	11 → sum
Subtraction (-)	11 minuend
	- 7 → subtrahend
	4 → difference
Multiplication (x)	7 → multiplicand
	x4 → multiplier
	28 → product
Division (÷)	7 quotient
	4√28 divisor

The techniques approaches and materials that the pupils will use to arrive at a correct solution must be put into consideration. Hobri, et al (2017) concluded that MLD students use a prospective learning paradigm as well as psychological factors to solve their mathematical problems. However, Susanto & Nugrahaningsih (2021) opened that if a student wants to identify a new concept or exciting information, such student must be accomplished by altering an old set of ideas.

9. Build a solid Foundation of Mathematics Concepts and Skills

Poor teaching can actually make a child's mathematics problem even worse. Mathematics should be taught in a way that solidifies the mathematics concepts so that they are stable and remain available to the children with learning disabilities in mathematics Bereiter (1968) suggested the following guidelines to help children develop a solid foundation of mathematics thinking.

- The emphasis on mathematics instruction should be on answering questions rather than on merely doing something.
- Whatever is learned should be generalized to many different kinds of applications and experiences with different ways of handling the problem.
- Beginning mathematics should be made coherent instead of being taught as a collection of unrelated topics and "tricks".
- Instruction must be thorough, so that children receive the practice they need Some mathematics programs devour too little time to practice.
- The mathematics program should be taught so that the children will gain confidence in their mathematics ability. Many adults become alarmed and defensive when faced with a mathematical problem because they lost confidence during early arithmetic instruction.
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III. CONCLUSION

To rehabilitates any child with learning disabilities in mathematics such child requires love, encouragement, and support. This will act as a reinforcement to ensure that they emerge with a strong sense of self-worth, confidence and the determination to keep them going even when things are tough to coop with normal classroom learning. Any parent whose child is having LDM, need to provide social and emotional tool that such child will need to survive through challenges during the course of his/her learning. Facing and overcoming a challenge such as a LD can help a child grow stronger and more resilient? Don't let the test, school bureaucracy, and endless paper work distract you from what's really important giving the child plenty of emotional and moral support.

RECOMMENDATIONS

It was observed that peer group will form a good strategy that both parents and teachers can employ to rehabilitee children with learning disabilities in mathematics. The principle of peer tutoring offer guides for effective instruction. The strategy emphasis on pre-number concepts (readiness skill for learning), teaching from the concrete to the abstract, providing opportunities and time for practice at their leisure time, generalizing the concepts and skills that have been learned, working with the children's strengths and weaknesses building a solid foundation of mathematics, concepts, skills, and providing a balance mathematics program for individual children with learning difficulties in Mathematics.

REFERENCE

[1] Baroody, A., &Ginsburg,H. (1991). A Cognitive Approach to the Assessing TheMathematical Difficulties of Children Labeled "Learning Disabled." InH.L.Swanson (Ed.), Handbook on the Assessment of Learning Disabilities, Austin; Pro-Ed. (pp. 117-228).

[2] Bender, L., (1957). Specific Reading Disability as Maturation Lag. Bulletin of The Orton Society, (pp7, 9-18.)

[3] Bley,N., & Thornton,C., (1989). Teaching Mathematics to the Learning Disabled. Austin,TX;Pro-Ed.

[4] Deshler,D., D.,Ellis,E.,S., &Lenz, B.,K. (1996). Teaching Adolescents with Learning Disabilities; Strategies and Methods. Denver: Love Publishing.

[5] Geary, D.C. and Hoard, M. (2005). 'Learning disabilities in arithmetic and mathematics: theoretical and empirical perspectives",in Handbook of Mathematical Cognition,ed. J.I.D. Campbell (New York, NY: Psychology Press), 253-267.

[6] GiannisKaragiannakis,AnnaBaccaglini-Frank and YiannisPapadatos(2014). Mathematical learning difficulties subtypes classification. Frontiers in human neuroscience, 8, 57.

[7] Gordon, N., (1992). Children with Development Dyscalculia. Development Medicine and Child Neurology (pp.34, 459-463).

[8] Harris,C., A., Miller,S.,P., &Mercer,C., D. (1995). Teaching Initial Multiplication Skills to Students with Disabilities in General Education Classrooms. Learning Disabilities: Research and practice, 10(3), (pp180-195).

[9] Hobri,H.,Susanto,H.A.,Hidayati,A.,Susanto,S.,&Warli,W. (2021). Exploring thinking process of students with mathematics learningdisability in solving arithmetic problems. International Journey of Education in mathematics,Science, and Technology (IJEMST),9(3),498-513.https//doi.org/10.46328/ijemst.1684

[10] Hutchinson, N. (1993). Effects of Cognitive Strategy Instruction on Algebra Problem Solving of Adolescents with Learning Disabilities. Learning Disabilities Quarterly, 16, 34-63.

[11] Johnson, D.W., & Johnson R.T. (1978). Cooperative Competitive and Individualistic Learning,Journal of research in Science Teaching,13,55-63.

[12] Keogh, B. (1994). A Matrix of Decision Points in the Measurement of Learning Disabilities. In G., R. Lyon (Ed,), Frames of Reference for The Assessment of Learning DisabilitiesBaltimore:Paul Brookes, (pp. 15-58).

[13] Keat,O.B.& H. Ismail. (2017). the Relationship between Cognitive Processing and Reading. Psychology and Human Development Department, 7(10), 44-52.

[14] Lee, A. Y., & Lee, A. J. (2020). Experience with diversity is not enough: A pedagogical framework for teacher candidates that centers critical race consciousness. Journal of curriculum Studies Research (JCSR), 2(2), 40-59. https://doi.org/10.46303/jesr.2020.9.

[15] Lenz, B., K., Ellis, E., S., &Scanlon,D.(1996).Teaching Learning Strategy to Adolescents and Adults with Learning Disabilioties. Austin,TX:Pro-Ed.

[16] Levine,M. (1987). Developmental Variation and Learning Disabilities. Cambridge, MA: Educators'PublishingServive.

[17] Miller, S., P. (1996). Perceptives on Mathematics Instruction. In D., Deshler, E., Ellis, &B.Lenz. Teaching Adolescents with Learning Disabilities. Denver:Love Publishing.

[18] National joint committee on Learning Disabilities. (1994). Secondary to Post-secondary Education Transition Planning for Students with Learning Disabilities. Austin, TX:Pro-Ed.

[19] Olojo, O.J. (2011). Effects of Cooperative, Competitive and IndividualisticI Instructional Strategies on Senior Secondary School Students' Learning Outcomes in Mathematics. Unpublished P.h.D Thesis, University of Ado-Ekiti.

[20] Olagoke, M... (2015). Relative Effectiveness of Cooperative Learning Strategy and Reciprocal Peer Tutoring in Improving Senior Secondary School Students' Mathematics Learning Outcomes in Ekiti State.. Unpublished M.A.(Ed) Thesis,O.A.U.Ile, Ife.
[21] Pennington,B.,F.(1991). Diagnosing Learning Disorders: A Neuropsychological Framework. New York:Guilford Press.
[22] Rapkin, I, (1995). Physician's Testing of Children with Developmental Disabilities. Neurology, Journal of child 10(Suppl.1), S11-S15.
[23] Rivera, D., M. (1993). Examining Mathematics Reform and Implications for Students with Mathematics Disabilities. Remedial and Special Education, 14(6), (pp 24-27).
[24] Rourke, B. (1993). Arithmetic Disabilities, 25,(pp. 214-226). Journal of learning Disabilities.
[25] Scherer,P., Beswick,K., DeBlois,L., Healy, L.&Opitz,E. Moser (2016). Assistance of students with mathematical learning difficulties: how can researcher support practice? ZDM- Mathematics Education, 48(5), 633-649.DOI:10.1007/s11858-016-0800-1.
[26] Silver, L. (1992). The Misunderstood Child. Blue Ridge Summit,PA:Tab Books.
[27] Slavin, R. (1991). Synthesis of Research on Cooperative Learning. Educational leadership 48(1), (pp.82-89).
[28] Susanto, H., A., Hobri, &Nugrahaningsih,T.K. (2021). Developing a handbook on multimedia integration in mathematics teaching for Idonesian primary school students. International Journal of Education in Mathematics, Science and Technology (IJEMST), 9(2), 236-251.
[29] Swanson, H., L.,&Christie, I.(1994). Implicit Notions of Learnind Disabilities: Some Directions for Definitions. LeatningDisabilities:Research and Practice,(pp.9,244-254).
[30] Szcus, D, .Devine, A., Soltesz, F., Nobes, A., andGabriel,F. (2013). Developmental dyscalculia is related to visuospatial memory and inhibition impairment. Cortex 49,2674-2688.doi:10.1016/j.cortex.2013.06.007.