Theory and Practice of Inclusive Education for Learners with Dyscalculia: A Case of selected school in monze District, Southern Province, Zambia

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.910000820

Received: 07 November 2025; Accepted: 14 November 2025; Published: 25 November 2025

ABSTRACT

This study focused on theory and practice of inclusive education for learners with dyscalculia. The main objectives of this study were, to establish how theory of inclusive education is being practiced when teaching learners with dyscalculia in selected school in Monze district, to come up with ways that would effectively enhance theory and practice of inclusive education to learners with dyscalculia in two selected schools of Monze district. The study was conducted at a selected school in Monze district because the school was an inclusive school. This study used a case study research design and data was collected using qualitative approach and methods. The study had a sample size of 19 respondents with the following distribution: 9 teachers, 6 pupils, and 4 administrators as these were expected to be suitable with the required data for the study. Thus, the instrument for data collection included the focused group interview guide for learners with dyscalculia, observation checklist for teachers teaching learners with dyscalculia, unstructured interview guide for administrators. The study used deductive thematic data analysis. The study discovered that theory and practice of inclusive education was not considered and practiced when teaching learners with dyscalculia in an inclusive setup because learners with dyscalculia were taught using teacher centered methods, books were not marked always, teachers just talked while learners listened, teachers concentrated much on learners without dyscalculia. The study unveiled that in order to enhance theory and practice of inclusive education for learners with dyscalculia, teachers have to teach using learner centered approach, one on one method, use of remedial work and give learners with dyscalculia conducive learning environment.

Keywords: Theory, Practice, Inclusive, Education, Learners, Dyscalculia, teachers and approach.

INTRODUCTION

Before delving into the approaches to address dyscalculia, we first need to understand it and consult its definition in contemporary literature. “The term dyscalculia is defined to describe specific difficulties with mathematics.” [14] argues that dyscalculia is not a lack of intelligence, but rather a difficulty to “acquire the essential concepts that underpin skills in performing mathematical procedures.” There are multiple aspects of mathematical thinking such as: number sense, spatial reasoning, verbal reasoning, counting, calculating and dyscalculia could manifest itself in different domains of learning and research has only been focusing on arithmetic. [13] on the other hand, there is need to understand how common the learning disability is and how learners experience it because dyscalculia is a specific learning condition that affects the comprehension and manipulation of numerical concepts, which can impact students' academic performance and well-being in mathematics education [8].[3] states that there is a problem of theory and practice in inclusive schools for learners with dyscalculia, several cases where elementary learners have difficulty learning mathematics, especially in understanding arithmetic concepts. [14] found that dyscalculia can be a serious obstacle to learning in the classroom and often times manifests itself in calculation and logical thinking. Learners who have difficulty understanding arithmetic concepts are classified as having disabilities in dyscalculia. Learners with dyscalculia must be treated early at the beginning of their education, although dyscalculia disorders are usually unconscious and difficult to be detected earlier. Until now, learners who have dyscalculia had less attention in Indonesia; one of the Indonesian government efforts dealt with dyscalculia disability and provided a policy for the enactment of inclusive education [7]. Indonesian government has covered the arrear of theory

by establishing a policy however it did not cover the practical part of teaching learners with dyscalculia in inclusive education, as intended by this study.

Jomtien Declaration [29] on the World Summit on Children, required countries to commit themselves in providing education to all children. The above documents did not spell out practical methods on how to teach learners with dyscalculia instead the documents focused more on theory and not on practice when teaching learners with dyscalculia in inclusive education. Hence the reason for this study. According to the Ministry of Education and Vocational Training United Republic of Tanzania, came up with the policy which stipulated promote and facilitate access to education for learners with special needs such as learning disabilities those with an intellectual disability, visual and hearing impairment. The overall objectives of introducing educational reforms together with other policy initiatives was to ensure growing and equitable access to high quality formal education and adult literacy through facilities expansion, efficiency gains, and quality improvement, accompanied with efficient supply and use of resources .However, the policy did not bring out the specific practices used in teaching learners with dyscalculia in inclusive education instead it focused much on the theory, hence the reason for this study. [24] on using differentiating instruction (DI) in south Africa, discovered differentiating instruction was effective in reducing the negative effects of poor academic performance on learners with dyscalculia. It was concluded that DI offers teachers the impetus to help all learners to improve their self-efficacy in mathematics. The study discovered (DI) to reduce the poor performance of learners with dyscalculia. However, the study did not highlight how practicing of theory of inclusive education can reduce the poor performance of learners with dyscalculia. Hence this study. According to [10] It has been recorded that 67% of learners' poor performance in mathematics in Nigeria was mainly due to poor pedagogical approaches used by teachers who rarely attend to learners' needs, but have high expectations for them. This has implications for learning processes for learners with dyscalculia, in that learners whose learning needs are thwarted or not met are likely to under-perform, develop poor attitudes, and demonstrate a lack of trust in their abilities. The study brought out poor pedagogical approaches used by teachers which may have implications on the learning process for learners with dyscalculia. However the study did not bring out the need to practice theory of inclusive education when teaching learners with dyscalculia. The reason for this study.

South Africa has emerged as a leader in dyscalculia research within the African context. Studies conducted [17] have provided valuable insights into the prevalence and characteristics of dyscalculia among South African learners. Additionally, organizations like in advocacy and awareness-raising efforts. However, the researchers did not highlight the need for theory and practice of inclusive education for learners with dyscalculia. However, the study did not bring to light the practice of inclusive education theory to learners with dyscalculia.

According to [11] National Assessment Survey, 70.25 per cent of Grade 5 Zambian learners were found to be 'Below Minimum Level of Proficiency in Math. In Zambia learners with learning disability are supported by law in terms of their education in the [15]. There has been various support being offered at international level for instance Indonesia, in Africa in particular Tanzania and Zambia towards the theory of inclusive education for learners with dyscalculia but very little has been done to show the practices used in teaching learners with dyscalculia in inclusive education. Therefore, this study focused on the theory and practice of inclusive education for learner with dyscalculia in inclusive education with specific to a selected school in Monze district.

Significance of study

The study was significant because it brought to light the presence of theory and practice for learners with dyscalculia and teachers teaching learners with dyscalculia to make learning and teaching more effective. It is also hoped that findings may also be added to the board of knowledge concerning theory and practice used in teaching learners with dyscalculia in inclusive schools. It may not be generalized except in cases where it fits with these findings.

LITERATURE REVIEW

The literature was presented according to the research objectives and these are, to establish how inclusive education is being practiced when teaching learners with dyscalculia, to analyze how inclusive education affects the academic of learners with dyscalculia, to establish ways that would effectively enhance the teaching of learners with dyscalculia in selected inclusive schools in Monze.

Theory and practice of inclusive education as being practiced when teaching learners with dyscalculia.

Theory and practice was considered while establishing how theory of inclusive education is being practiced when teaching learners with dyscalculia in inclusive setup.

Theory and Practice

[12] carried out a research on including students with special needs in Boston, United States of America. The study disclosed that teaching learners with dyscalculia requires Collaborative programs which is well-planned with a structure in which the teachers' roles and responsibilities are specified and carried out along with daily management and instructional decisions and classroom interactions. They highlighted the importance of collaborative programs which are well planned by teachers and carried out along with daily management and instructions programs. However, the researcher did not emphasize on the inclusive practices like daily practices and breaking down the content in chunks to allow learners with dyscalculia grasp the content. Which this study brought out.

[20] conducted a research on an active learning strategy for addressing dyscalculia in mathematics classroom in Free State, south Africa. The researcher argues that the Participatory Action Research (PAR) method is the chosen method to explore the effectiveness of an active learning strategy in addressing dyscalculia in a mathematics classroom. The researcher emphasizes on the need to include PAR methods in teaching learners with dyscalculia in inclusive schools as the most effective way of teaching learners in dyscalculia. In spite the introduction of the PAR method the researcher did not highlight the theories and practical activities involved when teaching learners with dyscalculia in inclusive education, which this study embarked on.

[18] conducted a research on learning of mathematics concept by learners with intellectual disabilities in Kitwe. The researcher pointed out that learners with moderate and severe dyscalculia where able to solve and make progress in problems related to algebra, data analysis, geometry, and computation using familiar stories, graphic organizers, and manipulative. The researcher discloses the importance of using familiar stories to teach algebra, data analysis, geometry and computation to learners with dyscalculia in inclusive setup. However, the researcher did not specify other practices used in teaching learners with dyscalculia which this study intended to discover.

Ways that would effectively enhance the theory and practice of inclusive education when teaching of learners with dyscalculia in selected inclusive schools

The literature presented the following themes; theory and practice and inclusive education while establishing ways that would effectively enhance the theory and practice of inclusive education when teaching learners with dyscalculia.

Learners with dyscalculia

[16] conducted a research on using cooperative learning to teach mathematics to with learning disability in Weta, Washington. The study discovered the Collaborative learning which involves students working together in small groups to solve mathematical problems. The researcher highlighted the need for collaborative learning in order to enhance the teaching of learners with dyscalculia. This approach can be particularly helpful for learners with dyscalculia who may struggle with individual instruction.

Theory and Practice

[5] carried out a study on Teaching Students with Dyscalculia a research on Providing Opportunities for Practice United Kingdom. The researcher discovered that Learners with dyscalculia may require additional practice opportunities to master mathematical concepts. Teachers can provide extra practice opportunities through games, activities, and worksheets. The researcher focused on additional practices for learners with dyscalculia to master mathematics concepts in order to enhance learning in learners with dyscalculia.

[6] carried out a research on technology-based interventions in Zambia. The study revealed that using technology-based interventions such as educational software, games, and apps can be helpful for learners with dyscalculia; the study further discovered that these interventions can provide a fun and engaging way to learn and practice mathematical skills. The researcher highlighted that using of technology intervention such as software, games and apps are ways of effectively enhancing the learning of learners with dyscalculia in inclusive education.

Inclusive Education

[9] conducted a research on assessment and interventions for children with mathematics difficulties in Routledge, New York. The study discovered that providing frequent and specific feedback can help learners with dyscalculia understand their strengths and weaknesses and adjust their learning strategies accordingly. The researcher brought to light the need for frequent and specific feedback as way that can enhance learning of learners with dyscalculia effectively. [28] focused on cognitive strategy instruction for adolescent disability in mathematics in Thousand Oaks, California. The study discovered found that cognitive strategy instruction, which includes metacognitive strategies such as self-monitoring and self-evaluation, can be effective in improving math performance for students with dyscalculia. The researcher highlighted that metacognitive strategies is one of the ways that can effectively enhance learning in learners with dyscalculia. [25] carried out the study on supporting students with dyscalculia in mathematics in United Kingdom. The researcher discovered the use of manipulative and visual aids approaches. The study highlighted that the use of manipulative and visual approaches as one way that can be effective in helping enhance the learning of learners with dyscalculia in an inclusive education.

[26] carried out a research on a case study of teaching strategies for child with dyscalculia in Zambia. The study discovered that a structured and repetitive teaching can help learners with dyscalculia master mathematical skills. The study further revealed that breaking down mathematical concepts into smaller, more manageable steps and providing repeated opportunities for practice and reinforcement. The researcher pointed out that structured and repetitive teaching coupled with breaking down mathematics concepts into smaller, manageable steps is a way that can enhance learning of learners with dyscalculia in inclusive education.

METHODOLOGY

Research paradigm

This research is qualitative in nature and used constructivism paradigm. According to [7], a research paradigm is a basic set of beliefs that guide the research process and help the researcher to define and address research questions. Constructivism is a learning theory that posits learners to construct new knowledge based on their experiences, interactions, and prior knowledge [21]. Its application in this study was that the interpretation of results depended on the responses of the correspondent which was constructed by them. Dyscalculia learners are intellectually generative individuals with the capacity to construct knowledge and share it to others subjectively. The researchers treated studied correspondents as vessels that have data that the research demanded.

Research Design

According to [4] a research design refers to the plan or strategy that a researcher develops to guide the collection, analysis, and interpretation of data in a research study. This study adopted a case study research

design. The case study approach allows in-depth, multi-faceted explorations of complex issues in their real-life settings because the researcher intended to understand a single situation about theory and practice for learners with dyscalculia in inclusive schools. Case study design involves collecting in-depth data and descriptive data which is non-numerical [31]. This was fitting well with this study because the researcher collected in-depth data which is non-numerical and described it in line with the response from the participant.

Target Population

According to [27] a population is a complete set of people with a specialized set of characteristics. In this

regard, the population for the study was derived from one selected primary school in Monze district, Zambia. The population for the study consisted of learners with dyscalculia and teachers for learners with dyscalculia and administer. The reasons for selecting the population were that the researcher was hopeful that they have the relevant data the study needed.

Study Sample

[2] defined a sample as any of the fully defined population and it is a subset of the population. Sample size in this case implies number of items, people selected for a study from within the target population [23]. This study constituted a sample size of 19 respondents with the following distribution: 9 teachers, 6 pupils, and 4 administrators as these are suspected to be suitable with the required data for the study.

Data Collection Instruments

In order to collect the data which is necessary for the current study, three main instruments namely semi structured interview guide, observation checklist and focus group discussion was used. This research used these instruments in order to provide a triangulation of instruments of the data to be collected for the study and in return help the researcher to collect data that was valid and reliable. Triangulation of instruments assisted in addressing the gaps from any instrument because information will be supplemented by other instruments.

Observation Checklist

An observation checklist as a strategy to monitor specific skills, behaviors, or dispositions of individual students or all the students in class [7]. The observation checklist was used to observe 9 teachers from the selected school. The 9 teachers were observed while teaching learners with dyscalculia in inclusive setup. Observation checklist was suitable for this research because the researcher observed the outcome on the contribution of the classroom environment from learners, methodologies used, curriculum modification and learner's academic performance. The researchers used the observation checklist because it was revealed information which people normally could not be able or unwilling to provide using other collection research instruments.

Unstructured Interview Guide

According to [26] a unstructured interview guide is a written list of questions or topics that need to be covered by the interview. The unstructured interview guide was the main data collecting instrument because the researchers interacted with respondents verbally while conducting the research. Before conducting interviews, the researchers developed a schedule of the interview to be conducted which acted as a guide and help the researcher direct the conversation towards the topic that was being searched on. In the study the researchers interviewed 2 head teachers and 2 senior teachers from a selected school and explored their understanding on theory and practice of inclusive education for leaners with dyscalculia. This is suitable for this research because it might help the researcher obtain answers to the research questions.

Focused Group Discussion Guide

[19] stipulates that a focus group is another data collecting instrument which involves a special type of group in terms of purpose, size, composition and procedure of sharing peoples' opinion, experiences, attitudes, and feelings on a specific topic. The focus group discussion is carried out in order to probe responses, follow up ideas, motives for further discussion on the point which were not clear in the one to one interview. One focus group was conducted among six (6) learners with dyscalculia of which the group consisted of 6 participants. The focused discussion group is this study was applied as follows; after interviewing participants and observing them the focus group discussion will be administered in order to probe responses, fore up ideas and motives for further discussion on points which were not clearly articulated from the interview and observations. Phone recorder, notebook, pens will be used in the study in case of alterations. The focus group discussing was suitable for this study because it helped the researcher to generate in-depth data for the study by probing opinions from participants

Ethical Consideration

While conducting research, the researchers faced complex moral dilemmas that were sometimes difficult to solve. In such instances, there was need for ethical considerations. According to [23], "ethics refer to principles or rules of behavior that act to dictate what actually acceptable is or allowed within profession". During entry into school premises, researchers sought permission from school administrators and teachers sampled classes. A consent form was requested from Kwame Nkrumah University. This helped the researchers' identity while in the field. The researcher ensured that anonymity and confidentiality of the respondents was observed and maintained. Respondents were also assured that the information obtained through the questionnaire is for academic purposes only and would not be used for any other purpose without the respondent's permission.

FINDINGS

Findings are presented according to the two objectives of this study and these are; to establish how theory of inclusive education is being practiced when teaching learners with dyscalculia in selected school in Monze district and to come up with ways that would effectively enhance theory and practice of inclusive education to learners with dyscalculia in two selected schools of Monze district.

Theory of inclusive education as being practiced when teaching learners with dyscalculia.

Learners with dyscalculia.

There was need to establish how theory of inclusive education is being practice when teaching learners with dyscalculia at a selected school under this study. The researcher used interviews focused discussion and observation checklist. Data was obtained from the students with dyscalculia, teachers teaching learners with dyscalculia, as well as from administrators who have the background of handling learner's dyscalculia. Data was presented using subtheme namely, learners with dyscalculia. The findings of the study discovered that the learners with dyscalculia were not given attention in inclusive classroom compared to learners without dyscalculia at a selected school this is reflected in the answers received from respondents.

During an interview with 4 administrators at the selected school, a question was posed to administrators on whether teaching learners with dyscalculia in inclusive classes was helpful or not? Their answers are summarized and shown in figure 1

Figure1: Administrators'; responses

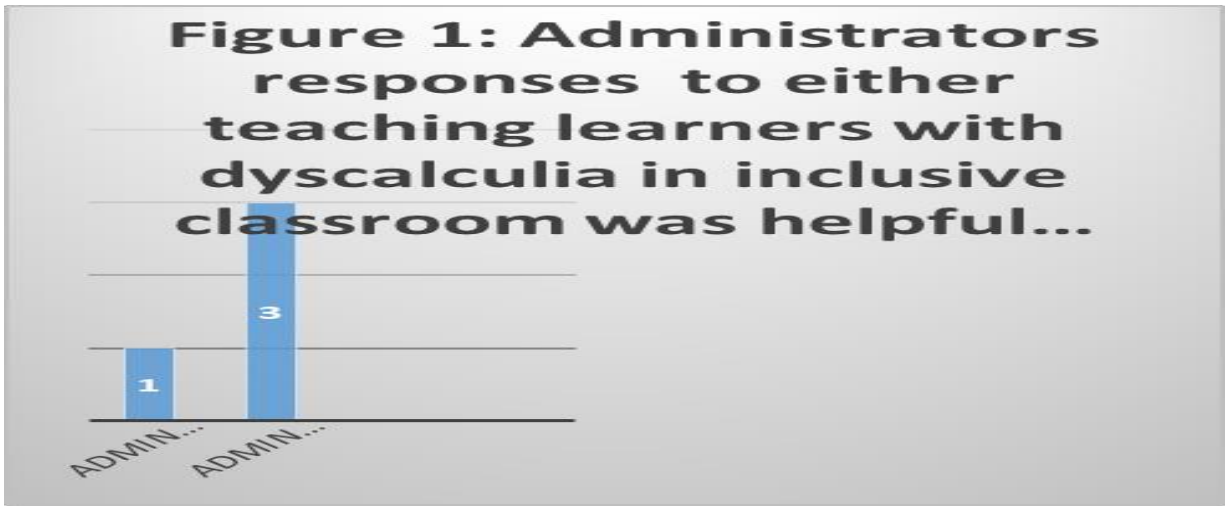

Figure1: indicates that the four administrators were interviewed one (1) administrator mentioned that teaching learners with dyscalculia in inclusive classes is helpful. The other three (3) administrators from the same school said that it is not helpful to teach learners with dyscalculia in inclusive classes.

Their responses are shown as follows.

[A1] stated that 'it is good to teach learners with dyscalculia in inclusive classes so that they can learn from other learners without dyscalculia.' [A2] echoed 'it is better to teach learners with dyscalculia alone separately so that they can learn at their own pace as placing them in inclusive classes delays the coverage of the curriculum.' [A3] said 'it is not helpful to teach learners with dyscalculia in inclusive classes as most of the teachers do not pay attention to them while teaching.' [A4] narrated that 'it is not helpful because learners with dyscalculia feel shy and scared to participate in classroom activities due to fear of being laughed at by those learners without dyscalculia the administrator further said learners with dyscalculia requires enough time to grasp the content placing them in the inclusive classes might not be the best way of teaching learners with dyscalculia.'

In order to find out how theory of inclusive education has been practiced when teaching learners with dyscalculia; The researchers had to observe classroom activities where the learners with dyscalculia at the selected school were learning 'fractions' in grade 7A. The teacher started the lesson by making a recap of what they learnt in the previous lesson. The recap was in form of question and answer technique. The learners without dyscalculia provided correct answers to all the questions asked by the teacher while no learner with dyscalculia managed to answer a single question.

Afterwards the teacher introduced a new topic 'fractions' and wrote it on the board. The teacher explained that fraction is a 'tiny, amount or proportion of something' the teacher wrote one additional fraction on the board and solved it as follows

- $\frac{61}{3} + \frac{2}{3} = \frac{19}{3} + \frac{2}{3} = \frac{21}{1} = 21$

The teacher then wrote another fraction on the board and asked the class if one pupil can come and demonstrate how to find the answer using the stages the teacher used in the previous example a few learners raised hands but none of them was a learner with dyscalculia the teacher pointed at the boy who solved the example correctly the teacher wrote 3 more examples on the board and none of the learners with dyscalculia managed to solve the fraction correctly. Then the teacher pared them to solve one question. Thereafter, the teacher grouped them in three groups in order to tackle another problem.

During class exercise the teacher wrote 5 questions on the board and asked learners to come up with answers following the examples that were given.

Exercise

1. $\frac{9}{14}+\frac{4}{12}$ 2. $\frac{9}{8}+\frac{3}{10}$ 3. $\frac{1}{5}+\frac{3}{15}$ 4. $\frac{1}{6}+\frac{1}{14}$ 5. $\frac{2}{9}+\frac{3}{18}$

It was observed that learners with dyscalculia could not remember the steps the teacher used to come up with the answers to the examples. However, learners without dyscalculia were able to translate the shapes on board into fractions. When the researchers and the teacher went around to check on how they were answering the questions, it was discovered that one learner with dyscalculia managed to identify one fraction out of the 6 who were in that class. When it was time to conclude the lesson, the teacher confirmed that to find the correct answer the learners should always find the lowest fraction of the two-given fractions.

It was observed that Students with dyscalculia strived to finish the exercise on time as the teacher kept on rushing them that they are running out of time the researchers could see other dyscalculia learners panicking to finish the exercise and they could not manage. However, students without dyscalculia were able to finish in the specified time. It was observed that the teacher teaching learners with dyscalculia in that selected school did not pay attention to learners with dyscalculia instead the teacher concentrated much on learners without dyscalculia in mathematics lesson and it was noticed that teaching learners with dyscalculia in inclusive classroom was not helpful as they did not seem to benefit from the lesson observed. The teacher was also seen using lecture method, group work and pair work while teaching them.

Thereafter researchers administered focused group discussion to six learners with dyscalculia because the researcher wanted to find out about what they can say about learning with other learners without dyscalculia whether it was helpful or not, the findings indicated that all the students with dyscalculia gave common responses and disagreed that learning with learners without dyscalculia was not helpful. This was indicated in their responses.

[L1] narrated that ‘every time I tried to answer in class other learners laughed at me when I got the answer wrong.’ [L2] responded that ‘the teacher does not point at me and am scared to raise my hand in case I don’t get it right she might.’[L3] echoed that the teacher only concentrates on those who are performing well in mathematics to me even mark my books are not marked because I do not finish writing my exercise on time.’ [L4] narrated that ‘I tried to answer a question in class and I did not get it right and the whole class laughed at me so it is better if the teacher just taught us alone.’ [L5] responded that I cannot remember the last time the teacher pointed at me in mathematics lessons to give an answer and most of the time the teacher just talk while we are listening.’ [L6] stated that ‘even if I raise my hand the teacher rarely points at me’.

The findings of this study on establishing how theory of inclusive education is being practiced when teaching learners with dyscalculia was more on the negative side. Because it was discovered that both learners with and without dyscalculia were learning together. On the other hand, if was found that it was not good and not helpful because learners with dyscalculia were not able to learn at their own pace, teachers did not pay attention to learners with dyscalculia, learners with dyscalculia feared to be laughed at, most learners with dyscalculia failed to finish the given work on time, learners with dyscalculia were not given chance to participate in mathematics lesson, learner preferred to be taught alone.

Ways that would effectively enhance theory and practice of inclusive education to learners with dyscalculia in one selected school in Monze district.

In order to come up with ways that would effectively enhance theory and practice of inclusive education to learners with dyscalculia in one selected school of Monze district; The researchers used interviews focused discussion and observations. Data was obtained from the learners with dyscalculia, teachers teaching learners with dyscalculia, as well as from administrators who had the background of handling learner’s dyscalculia. Data was presented using subthemes namely, learners with dyscalculia, theory and practice and inclusive education. Ways were reported as shown in Table1below;

Table 1: Ranked Matrix: Strategies to Enhance Theory and Practice of Inclusive Education for Learners with Dyscalculia

Strategy	Frequency	Salience	Theme Category	Notes / Illustrative Quote
One-on-one instruction	High	High	Instructional Strategy	"Teacher should teach me alone... so I can ask questions freely" - L1
Use of calculators/ICT tools	High	High	Instructional Strategy	"Calculator will make my work easier" - L4; echoed by A1
Remedial teaching	High	High	Instructional Strategy	"Teacher should do remedial work with me" - L1; supported by A4
Simplifying and breaking down content	High	Medium	Instructional Strategy	"Break classwork into small chunks..." - A1
Reducing group sizes / strategic pairing	Medium	High	Inclusive Practice	"Pair those who know and don't know maths" - L2; "reduce numbers in group work" - A3
Reviewing previous lessons	Medium	Medium	Feedback and Monitoring	"Reviewing earlier lessons is important..." - A2
Teacher should change attitude and support learner needs	Medium	High	Teacher Disposition	"Teachers should accept, nurture and support..." - A1
Real-life learning methods (e.g., role play, field learning)	Medium	Medium	Instructional Strategy	"Connecting lessons to real life situations" - A3
Giving feedback after every task	Medium	Medium	Feedback and Monitoring	"Provide feedback... check learner's work after every exercise" - A4
Minimizing workload to avoid overload	Low	High	Inclusive Practice	"Teacher should not give too much work" - L3; echoed by A2
Encourage asking questions without ridicule	Medium	High	Learning Environment	"Let me ask questions without fear of being laughed at" - L5
Allow learners more time to finish exercises or give homework	Low	Medium	Inclusive Practice	"If I fail, the teacher should give me the work as homework" - L6

DISCUSSION OF FINDINGS

The discussion is in line with the objectives of this study.

Theory of inclusive education as being practiced when teaching learners with dyscalculia.

Learners with dyscalculia

The findings were validated by path- smoothing model design of [1] who stated that, learners need a particular direction in terms of academic performance in mathematics. For instance, if learners with dyscalculia receive little or no attention in classroom as compared to other learners, they may encounter reduced performance in mathematics if a particular direction is not offered to them; the learners with dyscalculia will end up with low self-esteem. Thus, learners with dyscalculia receive little or no attention in classroom as compared to other learners while learning in inclusive setup because theory and practice was not used effectively. For instance

learners were not able to learn at their own pace, teachers did not pay attention to learners with dyscalculia, learners with dyscalculia feared to be laughed at, learners with dyscalculia failed to finish the given work on time, learners with dyscalculia were not given chance to participate in mathematics lesson, learner preferred to be taught alone.

The findings of this study are not similar to the findings of [22] who carried out a study on Mathematics efficacy among students with dyscalculia in public schools in Kandara Kenya. The study unveiled that learners with dyscalculia go through more than one difficulty throughout their academic work. Specifically, they face problems in motivation attribution and self-regard. This is because [22] discovered aspects of motivation attribution and self-regard which was not discovered in the current study.

The researchers' voice was that theory and practice of inclusive education was partially practiced when teaching learners with dyscalculia in inclusive education which might have led to their poor performance, because they were not given much attention compared to learners without dyscalculia.

Theory and Practice

The findings of this study were validated using Practice and theory Path- smoothing model design by [1] which justifies the teaching approach on the basis of variation theory which is characterized by care constructed small step, where the teacher needs to devise sequences of practice that are minimal that is to say only one step is done at a time. This is where a teacher needs to plan the mathematics curriculum in small sequences in order to allow learners with dyscalculia grasp the concept through practices. If this is done learners with dyscalculia improves in mathematics. The findings of this study were not similar to the theoretical framework path-smoothing model designed by [1], this is because Allan focused on the need for teacher to devise sequences of practice that are minimal in small sequences in order to allow learners with dyscalculia grasp the content through practices, which this current study did not discover. In the current study learners with dyscalculia did not benefit academically while learning in inclusive setup because theory and practice of inclusive education while teaching learners with dyscalculia was not well practiced in inclusive classrooms. For instance, teachers used teacher centered approach where teachers were just talking while teaching and learners were just listening, they used pair work, group work, learners were not given time to ask questions and class work was not marked, learners were not pointed at and their performance was bad in mathematics, only in few cases were learners finished some of the class exercise or activity**.**

The findings of this study are not similar to the findings of [20] who conducted research on an active learning strategy for addressing dyscalculia in mathematics classroom in Free State, South Africa. The researcher argues that the Participatory Action Research (PAR) method is the chosen method to explore the effectiveness of an active learning strategy in addressing dyscalculia in a mathematics classroom. The findings were different because [20] found that participatory action was the chosen method to explore the effectiveness of an active strategy in addressing dyscalculia in mathematics classroom. However, this current study discovered that learners were not participating because they were scared of being laughed at, teachers used teacher centered approach, teachers were just talking while teaching and learners were just listening, learners were not given time to ask questions and learners were not pointed at and their performance was bad in mathematics.

The researchers' voice was that theory and practice of inclusive education was partially practiced when teaching learners with dyscalculia in inclusive education which might have led to learners not benefitting and perform badly in the process of implementing theory and practice of inclusive education.

CONCLUSION

It was evident enough from the findings that theory and practice of inclusive education was not considered and practiced when teaching learners with dyscalculia in inclusive settings because learners were not able to learn at their own pace, teachers did not pay attention to learners with dyscalculia, learners with dyscalculia feared to be laughed at, learners with dyscalculia failed to finish the given work on time, learners with dyscalculia were not given chance to participate in mathematics lesson, learner preferred to be taught.

The study also discovered the ways to effectively enhance theory and practice of inclusive education for learners with dyscalculia which were that; teachers need to use step by step teaching approach while teaching learners with dyscalculia. Connecting lessons to real life situations for example role play games and field learning. Change of their attitudes towards learners with dyscalculia. Support them emotionally. To stop giving learners with dyscalculia too much work and breaking down of class work into small chucks to allow learners with dyscalculia grasp the content bit by bit. To provide feed -back to learners and check learners learner's work after every exercise. The use of catch up or remedial work. To use calculators and computers when teaching. To explain all the concepts more before giving class work to learners. To encourage safe questioning without ridicule. To consider the learner's ability.

RECOMMENDATIONS

Based on the finding of this study the following are recommended to be prioritized for implementation in the selected Monze district school:

1. Teachers to use one-on-one support when teaching learners with dyscalculia.
2. Teachers should encourage learners with dyscalculia to access and use tools like calculators and computers while learning mathematics in an inclusive environment.
3. Teacher to dedicated their time for remedial or catch up sessions beyond class hours when teaching learners with dyscalculia.
4. Teachers to chunk tasks and teaching through simplified content while teaching learners with dyscalculia.
5. There is need for administrators to encourage attitude transformation training for teachers for them to adopt empathy and flexibility when teaching learners with dyscalculia.
6. Teachers to strategically use pairing and small group instruction to foster peer learning when teaching learners with dyscalculia.
7. Teachers to provide routine feedback and formative assessments after lessons to learners with dyscalculia.
8. Teachers to create safe learning environments that encourage learners with dyscalculia questioning without fear.
9. The government and stakeholders should invest in resources and teaching aids tailored to learners with mathematical learning difficulties.
10. Collaboration between educators, parents, and specialists is essential to enhance inclusive strategies.

Applicability

The finding of this study is applicable to the case study school and any other school which might have similar situations.

ACKNOWLEDGEMENT

In the first place, we would like to express our sincere gratitude to Kwame Nkrumah University in Zambia for giving us an opportunity to do research. We would like to thank the rest of all participants who made this study possible and these were learners with dyscalculia, teachers teaching leaners with dyscalculia and administrators managing the school where this study was taking place. Lastly, we would love to acknowledge our family members for their support financially during our research.

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