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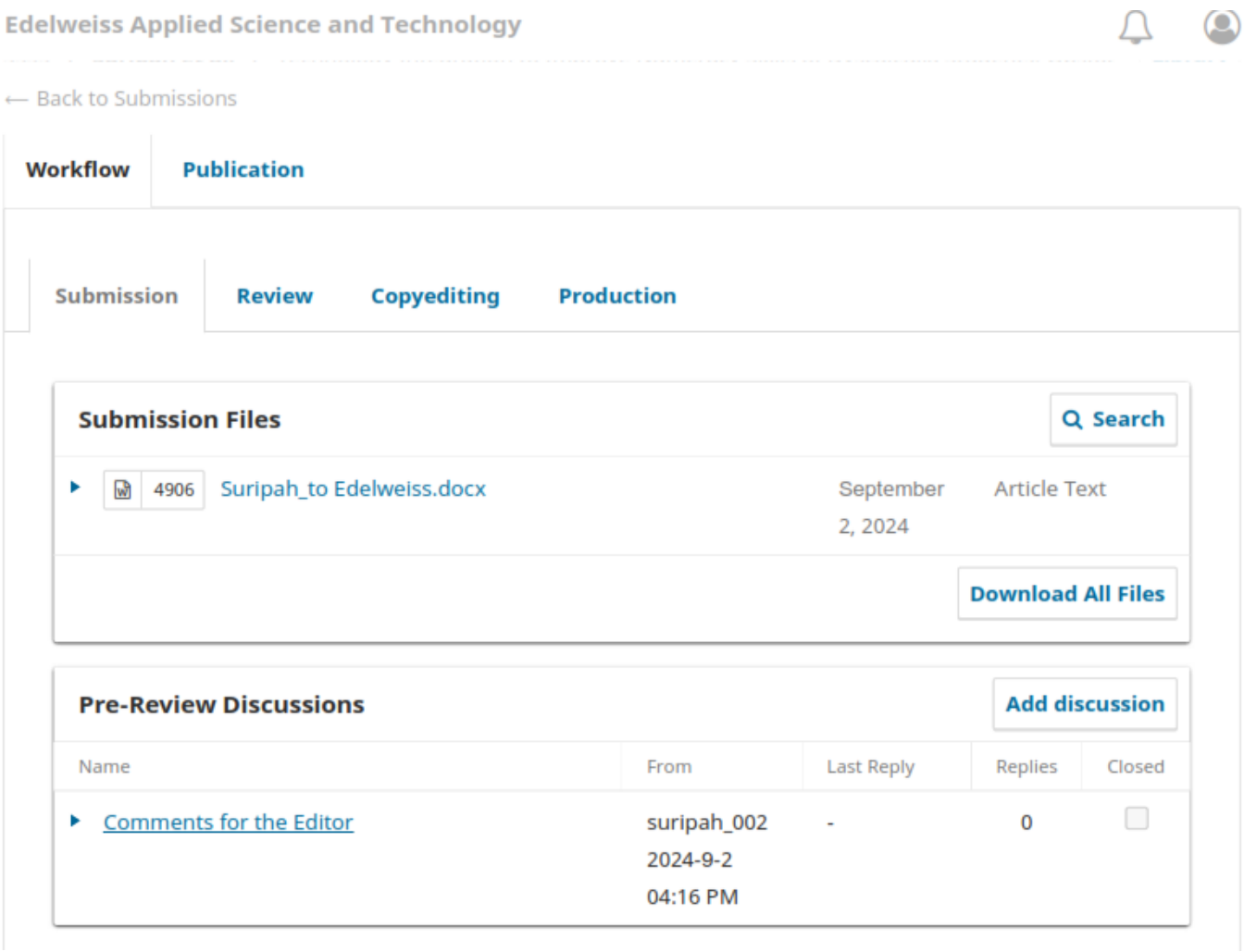

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Edelweiss Applied Science and Technology

Technology Integration to Improve Numeracy Skills of Dyscalculia Students: Obstacles of Inclusion Schools in Indonesia

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Abstract: Several studies related to numeracy and technology have been carried out a lot, but researchers have not paid much attention to inclusion organizers in developing numeracy skills in dyscalculia-students by integrating technology. Therefore, this study aims to describe what obstacles are experienced by inclusion schools in developing the numeracy skills of technology-integrated dyscalculia students. The subjects of this study are 6 Headmaster and 12 teachers of inclusive schools in 6 junior high schools in Riau Province, Indonesia. Data was collected using interviews and Focus Group Discussion (FGD). Based on the results of data analysis, the following obstacles were obtained: First, the limitation of human resources. Second, government policies and regulations have not presented comprehensive program guidelines. Third, the implementation of the curriculum in the learning process is inadequate. Fourth, the inclusive school culture is not conducive and some teachers are not used to integrating technology in mathematics learning for children with special needs. Fifth, the numeracy skills of dyscalculia students still has problems in calculation operations, and comprehension of mathematical symbols, and Sixth, the participation and support of the family have not been well communicated.
Keywords: *dyscalculia students, inclusion, numeracy skills, obstacles, technology integration*

1. Introduction

The development of the current learning paradigm requires technology to help the implementation of education and the achievement of learning goals. Various ways are used by teachers to integrate technology in learning in order to facilitate students in practicing their numeracy skills. One of the media that can be used by teachers is to integrate technology using the Quizizz application.

According to [1–5] technology integration in the form of assisted learning media the Quizizz application is defined as a game-based educational application, including many game activities into the classroom and making the classroom interactive. In addition, the Quizizz application is also able to motivate students to compete academically. The implementation of learning can be done in the classroom on electronic devices. Through Quizizz, students can actively interact and facilitate discussions [6–8] The use of technology in learning, especially mathematics, is highly dependent on the teacher's ability to teach and operate the media used. The use of good learning media is believed to have an effect on students' abilities. Students can use learning media not only in the classroom, but can access outside the classroom. The use of Quizizz can also be an alternative to improve the numeracy skills of students, both normal students and students who experience Dyscalculia.

Numeracy skills is an ability related to calculation operations and applying skills in daily life [9, 10]. In addition, numeracy skills are related to self-confidence, and the ability to work in the realm of spatial information to make effective decisions in everyday life. Numeracy skills are beneficial for all aspects of life. Numeracy skills for normal students are certainly not an obstacle, because they can catch directly quickly both through regular learning and with the integration of technology. It is different with students with special needs, of course, it needs more attention from the inclusion education provider appointed by the government.

Inclusion Education [11, 12, 14] It is a school that accommodates all students regardless of physical, intellectual, social-emotional, language, or other conditions. This includes other disabled and gifted children. The government through [14] about inclusive education, providing opportunities for children with disabilities, and having special intelligence to participate in education in an educational environment together with other students in general. Inclusion education provides the widest possible opportunities for special needs without [15–19] This is in line with the enactment of the independent learning curriculum. In accordance with the purpose of the enactment of the independent curriculum is to facilitate individual differences. Students are expected to no longer feel discriminatory treatment in getting the right to learn.

In schools that provide inclusion, students with special needs learn together with regular students, the challenge of developing numeracy skills becomes more complex [20]. Students with special needs may have barriers in the learning process that require different approaches and teaching strategies than the average student [21]. Therefore, math teachers in inclusion schools must be able to adapt their teaching methods to meet the diverse needs of the classroom.

However, in reality, inclusion education is still not paid much attention. Teachers who teach in inclusion schools are still constrained and experience difficulties and obstacles to develop students' numeracy skills [22, 23] These obstacles can include limited knowledge and skills in inclusive learning strategies, lack of adequate support and resources, and difficulties in assessing and adapting teaching approaches to suit the needs of each student [29, 30]. In addition, teachers also often face challenges in creating an inclusive and supportive learning environment, where all students feel welcome and motivated to learn [26, 27].

These obstacles not only affect the effectiveness of the learning process, but can also have a negative impact on students' numeracy development, especially for those with special needs. Therefore, it is important to identify and understand the obstacles faced by mathematics teachers in learning in schools that provide inclusion. With a deeper understanding of these obstacles, it is hoped that the right solution can be found to improve the quality of mathematics learning in inclusion schools. The effect is that all students can achieve their maximum potential in the field of mathematics.

2. Research Methods

2.1 Research Design

This study is a qualitative study with a phenophysiological approach. This study was conducted to obtain an overview of teacher obstacles in implementing learning for students with special needs in inclusive schools in technology-integrated mathematics learning. The primary data source in this study is information that is in accordance with what was studied through Focus Group Discussions (FGD) and interviews.

2.2 Participans

This research was conducted in 6 inclusive schools in Riau province. The participants of this study were 6 Headmaster and 12 mathematics teachers. The initial stage was the Focus Group Discussion (FGD) and Interview activities. To obtain in-depth information about the challenges of inclusive schools in integrating technology to improve the numeracy skills of Dyscalculia students, we conducted interviews with 6 Headmaster and two mathematics teachers from each inclusive school. To make it easy to understand, participant writing is coded as follows.

Table 1.
Participant Coding

Participan	Coding	Participan	Coding
Headmaster 1	H1	Teacher 4	T4
Headmaster 2	H2	Teacher 5	T5
Headmaster 3	H3	Teacher 6	T6
Headmaster 4	H4	Teacher 7	T7
Headmaster 5	H5	Teacher 8	T8
Headmaster 6	H6	Teacher 9	T9
Teacher 1	T1	Teacher 10	T10
Teacher 2	T2	Teacher 11	T11
Teacher 3	T3	Teacher 12	T12

2.3 Data Collection and Analysis

The data collection technique in this study uses interviews and FGD. Before conducting interviews, the research began with an FGD with the principal and teachers of the inclusion organizers. After the FGD was carried out, and found several problems related to the obstacles experienced by the inclusion organizing schools, followed by interviews with each of the principals and teachers who were the target

of the research. After all activities are completed, it is continued with comprehensive data analysis.

Data analysis techniques are carried out by collecting data, separating, looking for patterns, finding what is important, and determining what can be conveyed to others [28]. The detailed data analysis steps are carried out as follows: (1) data collection; (2) data reduction; (3) data presentation; and (4) drawing conclusions. The data obtained from the interview results are recorded in field notes consisting of two aspects, namely description and reflection. Description notes are natural data that contains what the researcher sees, hears, feels, witnesses and experiences himself without any opinion and interpretation from the researcher about the phenomenon encountered. Meanwhile, reflection notes are records that contain impressions, comments and interpretations of the researcher about the findings found and are the material for the data collection plan for the next stage. To obtain this record, the researcher conducted interviews with several informants who were considered to know about the problem to be researched. The theme in exploring the obstacles faced by the inclusion organizing school is (1) Limited human resources; (2) Government policies and regulations; (3) Implementation of the curriculum in the learning process; (4) School Culture and Integration of Technology in Mathematics Learning; (5) numeracy ability of students-dyscalculia; and (6) Family participation and support. The interview data obtained in the final analysis results were concluded based on the results of data reduction obtained based on the relationship between patterns of sub-sub-themes which were then determined accordingly.

3. Results and Discussion

This research stage was carried out to explore the obstacles faced by inclusion schools in organizing learning, especially mathematics learning. The results of the interviews were grouped according to the five themes that became interview material for cross-checking, then reduced and searched for sub-sub-themes. After that, it is connected between the subthemes to get the final conclusion. In this study, five themes were found to explore the obstacles faced by the inclusion organizing schools. namely: (1) Limited human resources; (2) Government policies and regulations; (3) Implementation of the curriculum in the learning process; (4) Integration of technology in mathematics learning; (5) numeracy ability of students-dyscalculia; and (6) Family participation and support. Each of the themes found is described and presented as follows.

3.1 Human Reseource Limitations

Human resources are one of the important components that need to be considered in the implementation of inclusive education. However, the real conditions on the ground often do not match expectations. One of the main obstacles is the limitation of human resources, including funds, personnel, and facilities. To provide quality inclusive education, schools need dedicated teachers of inclusive education, adaptive equipment, and infrastructure that supports physical accessibility. It is undeniable that the existence of special students who join regular classes together with students in general, requires more attention. However, more attention to existing children with special needs has not been fully realized. This, of course, is an obstacle faced by the organizing school. Based on the results of the analysis of research data, there are four sub-themes found for the theme of Human Resource Limitations as presented in the following Table.

Table 2.
Reduction results related to human resource limitations

Item	Sub-Theme	Relationship between sub-themes
1	There is a lack of special training to teach students with special needs.	Human resources in inclusive schools are still limited, both understanding from teachers in particular, as well as infrastructure to provide inclusive education.
2	We don't understand how to handle leftovers with special needs because we are regular teachers.	
3	The teacher personnel in our school are limited, not enough for *the teaching team*.	
4	Our school does not have special accompanying teachers, nor adequate equipment.	

Some examples of statements by school principals and teachers that support the theme of limited human resources are as follows.

"We have not received any more training, except for the early days when it was appointed by issuing a decree as an inclusive organizing school..."(H1). " I was invited and participated in training, once when the school wanted to be decreed as one of the inclusive organizing schools, so I didn't understand it yet... (T1). It is different from the statements delivered by teachers and other school principals. "… In addition to the absence of accompanying teachers, we lack adequate facilities to support students with special needs." (H2). In addition, teachers feel overwhelmed, if they have to face students with special needs alone in class without assistance or helpful teacher friends. As a result, new learning can be carried out in a standard manner, not much improvisation.

Based on several statements delivered by the principal and teachers, there are obstacles in terms of human resources. Lack of training, limited teacher personnel with a large student capacity in one group, make teachers less effective in learning in the classroom. In addition, the lack of skills possessed by teachers makes teachers sometimes confused in dealing with problems that occur when students with special needs need special treatment. Apart from the understanding and skills of teachers, the limitations of facilities and accessibility are obstacles for inclusive education providers. This finding is in line with the opinion [41,25] hat one of the obstacles experienced by some schools that provide inclusion is that it is not accompanied by the availability of trained teachers provided to accompany students with special needs.

3.2 Government Policies and Regulations

Some education systems may have policies or regulations that are not supportive inclusion practices. Changes in education policies and changes in school organizational culture are often necessary to facilitate inclusive education. To achieve the goals and implement the policies made by the government, inclusive schools need clear directions and policies. However, from the results of the initial study, the school stated that for the implementation of education itself, there are no comprehensive guidelines and policies from the government. Meanwhile, schools appointed as education providers are still fumbling in terms of the implementation of learning, both in terms of learning policies, as well as assessments of students with special needs received by the school. Based on the results of the analysis of research data, there are three sub-themes found for the theme of government policies and regulations presented in Table 3.

Table 3.
Reduction results related to government policies and regulations

Item	Sub-Theme	Relationship between sub-themes
1	Guidelines or guidelines that are not yet clear, guidelines is not comprehensive.	Government policies and regulations have not presented comprehensive program guidelines, ranging from programs to funding support to facilitate students with special needs.
2	There are no clear policies and regulations related to inclusive education programs.	
3	Not having enough funds to implement policies that support students with special needs.	

Inclusive schools do not have clear policies and regulations related to guidelines and programs. Therefore, the school has made its own policy to help implement learning for students with special needs who are among other regular students. This statement is supported by the results of the interview as follows.

"I myself and the teacher component and also the Counseling Guidance are still confused, there is no inclusive program that is specifically programmed..." (T2, T6). "Initially, we tried to deal with students with special needs by providing makeshift learning aids, such as pictures or math props, the important thing is that the students can experience changes..." (H1). Another case is the mathematics teacher whose class has an Autism category ABK. What is done is to try to bring the student to study on his own in a quiet room. This is done because at a certain time student "A" goes berserk and does not want to study with other friends in the class. "…… When my students have tantrums and don't want to study with other friends in class, I take them to another place to calm down and bring their own learning, then

other students in the class are given a continuation of the assignment according to the material they are studying at that time.." (T3).

Based on several statements from interviews with school principals and teachers, it indicates that due to the lack of comprehensive guidelines and regulations from the government, each school finally made its own policy breakthrough. The school said that cognitive learning outcomes had not been met. At least in terms of affective and psychomotor aspects, students with special needs can be facilitated even though it is not optimal. At least in terms of affective and psychomotor aspects, students with special needs can be facilitated even though they are not optimal. Initially, the school did not have a target cognitively for students with special needs.

The government policies and regulations that are not yet comprehensive are another challenge for schools in carrying out inclusive education. Based on the results of the interviews, the inclusion organizers are still confused in implementing inclusive education programs because there are no clear guidelines from the government. This finding is in line with the research of [41,42] that in particular, there is no comprehensive guidance for inclusive organizers. Schools are forced to make their own policies to accommodate the needs of students with special needs. The absence of structured guidelines results in inclusive education programs running as they should, with schools adjusting policies based on their internal conditions [32]. The lack of allocation of funds from the government to support the implementation of inclusive education is also one of the main obstacles. Therefore, schools must be creative in optimizing limited resources.

3.3 Curriculum Implementation in the Learning Process

Inclusive schools must develop a curriculum that suits different levels of students' abilities and needs. This can be a challenging task and requires additional resources. The curriculum as a handle and foundation in implementing rules and learning, is an important concern to become a signpost in the implementation of inclusive education, in particular. This aims to ensure that the learning process can be carried out properly in accordance with the learning objectives to be achieved. Based on the results of the interview analysis, there are 6 sub-themes obtained for the theme of curriculum implementation in the learning process which are presented in detail in Table 4.

Table 4.
Reduction results related to curriculum implementation in the learning process

Item	Sub-Theme	Relationship between sub-themes
1	The curriculum used in schools is not adequate to meet the needs of students with special needs	The learning curriculum used by inclusion education providers is inadequate.
2	It is still difficult to assess the progress and achievements of students with children with special needs.	
3	Evaluation and assessment methods that are not appropriate with various students	
4	Classroom management is not effective, there are students with different levels of attention.	The learning process has not been able to carried out effectively.
5	Inadequate teaching materials and materials, including the availability of textbooks and software.	
6	Limited time, students with special needs need additional time to pay attention.	

The opinions of teachers who support the theme of curriculum implementation in the learning process are as follows.

"… Because in that class there were 40 students and even 46 students, so I was confused between achieving understanding or completing the material... it is difficult to manage the class" (T1). It's different in other schools.... "Our class is indeed set up with small classes, but this small number is only 20 and 16 students, the energy exceeds the teaching of students with large classes... some students who

are "hyperactive students" contaminate classroom conditions" (T4). As one of the effects of a less conducive classroom is that the learning process becomes quite disrupted. To calm a noisy classroom is quite time-consuming to learn. As an impact, learning becomes less effective, often lacking time even though the material that must be achieved has not been completed.

One of the other obstacles in the aspect of the curriculum and learning process is the constraint of students with special needs who do need more attention in condition. The curriculum implemented is not fully adequate to meet the needs of students with special needs. Teachers also have difficulty assessing the progress of students with special needs, because the evaluation methods used are not appropriate for students with various levels of ability. One of the other obstacles is the lack of special accompanying teachers for children with special needs [33].

In addition, classroom management is a challenge in itself. The large number of students in one class (reaching 40-46 students) makes it difficult for teachers to manage student attention, especially when there are students with special needs who need special handling. Teachers are also still constrained in providing relevant and adequate teaching materials, as well as lack of time to give extra attention to students with special needs [45,46].

3.4 School Culture and Technology Integration in Learning

A school culture that does not support inclusion can be a major obstacle. This includes negative attitudes and perceptions from staff, students, and parents towards students with special needs. Inclusive education requires positive and inclusive cultural change throughout schools. In addition, inclusive education providers must not ignore the importance of technology integration to support the achievement and smooth running of programs planned by schools and supporting elements. Based on the results of the interview, there are 7 sub-themes related to school culture and the integration of technology in learning presented in Table 5.

Table 5.
Reduction results related to culture and technology integration in learning

Item	Sub-Theme	Relationship between sub-themes
1	There is a school culture where there is still stigma and discrimination against students with special needs.	School culture, and public awareness, including parents who are not yet conducive, are obstacles to the implementation of inclusive education.
2	The inability of some schools to accept difference.	
3	Lack of involvement of parents and the community in supporting inclusive education.	
4	Lack of awareness of teachers and staff in applying awareness and inclusive principles.	
5	Lack of adequate access to technology.	Teachers have not yet understood how to integrate the right technology for inclusive learning.
6	Teachers do not have enough understanding of how to integrate technology into inclusive learning.	
7	Teachers do not always have an understanding of the principles of technology.	

Some of the interview results that support the theme of school culture and the integration of technology in learning are described as follows.

"...Some parents have been cooperative with the school, but there are also parents who have not been able to accept the reality of their child's condition..." (H3). Furthermore, the reality that occurred was resistance from parents, who were kindly asked to come to school for discussion, but what existed was a bad statement from the parent of one of the students with special needs. From that incident, the school as one of the inclusion organizers actually felt that their efforts were not appreciated by the community and parents. And on the other hand, there is one of the parents who meets the researcher directly and politely. A mother said "thank you for the attention and assistance given to my child, she said with tears in her eyes, so far there has not been any extraordinary form of attention given like this..." (Mother). Even one of the teachers added the truth of the mother's statement with the statement "... One of the

special needs students in my class, should not be tired... If you are tired, you usually have nosebleeds and feel dizzy.." (T6). In fact, the teacher must provide Tissu to prepare for when at any time something happens that cannot be done by the student with special needs.

Looking at the statements netted from the results of the interviews, it indicates that school culture needs to continue to be improved and socialized en masse for the sustainability of inclusive education. This inclusive education is not only the task of the school providing education, but our task with all components. All elements, schools, staff, parents and also the community must support each other to be able to ensure the comfort of students with special needs who come with other regular students.

Related to the integration of technology in learning in schools that provide inclusion, it can be obtained from the results of interviews with principals and teachers as follows.

"I don't want to apply technology in learning, but the classroom conditions are not yet possible." (T8, T10). Furthermore, in other schools, information was obtained that,... "I more or less understand technology because I am also taught when I am in college, but how to teach children with special needs, I don't have an understanding yet..." (T6, T12). The statements of these teachers are certainly justified by school officials, again there needs to be intensive training and self-updating related to inclusive organizers. At least there needs to be a warm-up for teachers who have just joined after the decree appointing this inclusive organizer is carried out. This will be very useful for the sustainability process and existence of education for children with special needs in the future.

A school culture that does not fully support inclusion, such as stigma or discrimination against students with special needs, is one of the main obstacles to the implementation of inclusive education [36, 37]. Not all parents of students with special needs are ready to accept their child's condition, and some show a lack of cooperation with the school [38]. This indicates the importance of further socialization and education to all elements of schools and society to create a more conducive inclusive culture.

Technology integration can be an effective tool in inclusive learning. However, there are still many teachers who still do not have enough understanding of how to integrate technology into learning, especially for students with special needs [39]. App integrations like Quizziz can be an alternative, but further training is needed for teachers to maximize their use in inclusive education. Technology integration is also believed to be an alternative in helping to develop the numeracy skills of students with special needs [40].

3.5 Residual Numeracy Ability-Discalculia

A student's numeracy ability refers to a person's ability to understand, use, and manipulate numbers and mathematical concepts in a variety of everyday situations. It includes a basic understanding of numbers, mathematical operations (addition, subtraction, multiplication, division), measurement, pattern understanding, mathematical problem solving, and the ability to make connections between mathematical concepts and real-life situations. Strong numeracy skills are essential in education, as they are the basis for a deeper understanding of mathematics at a higher level. Dyscalculia is a neurological condition that affects a person's ability to understand, process, and use mathematical concepts effectively. It is a condition similar to dyslexia, but it has to do with mathematics. Individuals with dyscalculia may have difficulty understanding mathematical symbols, remembering mathematical facts, and executing basic mathematical operations. They can also have difficulty understanding mathematical relationships and identifying patterns. Dyscalculia is not just a mistake in learning mathematics, it is a specific disorder that affects mathematical ability fundamentally. Specifically, for the results of the interview, two sub-themes were obtained that led to the numeracy ability of Dyscalculia students. The details related to the sub-theme are presented in Table 6 below.

Table 6.
Reduction results related to students' numeracy ability-dysclulia

Item	Sub-Theme	Relationship between sub-themes
1	The numeracy ability of some students in need cannot be equated with other regular students.	Numeracy skills still have problems with calculation operations, as well as understanding mathematical symbols.
2	For the operation, the addition and multiplication calculation is only a two-digit stage.	
3	It must be repeated, including the understanding related to symbols and tables.	

The completeness of interview data that supports sub-themes related to numeracy and dyscalculia skills is as follows.
"....I have to be patient if I teach, I have to wait for him to remember and count from his ten fingers to keep it in his head..." (T6). However, there is the opposite, there is one student with special needs who actually has a higher level of calculation speed and mastery of mathematics than other regular students. This is also proven in the final test results of numeracy ability to get a score of 82, and all questions of the five existing questions can be solved even though there are still incomplete ones.

The numeracy skills of students with special needs, especially those with dyscalculia, require more attention. Dyscalculia is a neurological condition that affects a student's ability to understand and process mathematical concepts. The findings of the study show that some students with special needs have difficulty understanding basic calculation operations, such as addition and multiplication of two numbers, as well as in recognizing mathematical symbols [41,42].

Teachers who handle students with special needs in mathematics learning need to be more patient and repetitive in delivering material. Some students need repetition over and over again to understand basic concepts. However, there are also findings that some students with special needs have higher mathematical abilities than other regular students, so an individualized learning approach is very necessary. This finding is supported by [43] the fact that some inclusive students actually have certain advantages, for example, memorizing and calculating quickly, and some write very neatly. Moreover, there is an important role for parents in accompanying their children.

3.6 Participation, External and Family Support

Involving parents in the inclusion process is key. However, good communication with parents and understanding of their child's needs can be challenging. In addition, inclusive schools often require support from external institutions or organizations, such as research institutions or government agencies, to overcome the various obstacles they face. Some students with special needs also need outside support such as psychiatrists. Additional psychosocial to address their social and emotional challenges. Schools need to provide this support so that students can feel safe and integrated in the school environment. Lack of awareness and understanding society and even parents often do not have enough understanding of the concept of inclusion and may perceive it as a threat to their children's education. As for the details related to the sub-theme of Participation, external and family support is presented in Table 7.

Table 7.
Reduction results related to participation, external and family support

Item	Sub-Theme	Relationship between sub-themes
1	There needs to be good communication with people parents of students with special needs.	Inclusive education providers need to establish communication with various parties and active participation with families.
2	Parents prepare special equipment that students with special needs are needed.	
3	There needs to be cooperation with guidance and counseling and school psychologists	

Based on the results of research that supports the theme, there are several statements that corroborate the sub-theme, among others, as follows.

"I feel relieved that there are researchers who help our students, even the psychologists included in this study add to the insights of all of us." (H1). Likewise with other schools, principals and teachers feel that there is additional knowledge when they receive material presentations from psychologists who help with how to recognize the characteristics of students with special needs, and how to handle problems when problems occur during the dispersal process or when they are outside the classroom. The response of one of the parents of students with special needs was also very positive when involved in this research activity. Parents feel appreciated, and feel that their children are cared for. ".. Which parent wants to have a special child... He said while shedding tears. We are still grateful that we can still go to school in the same place as other friends. Parents also deserve to be grateful for a classroom environment that can accept the existence of students with special needs in their midst.

Based on these findings, it indicates that participation from all parties is urgently needed to help implement inclusive education. The participation of parents, and other parties such as cooperation with guidance and counseling teachers and school psychologists needs to be considered. In fact, the school can budget for the allocation of education funds to collaborate with school psychologists so that they can detect the existence of children with special needs early. Thus, the school no longer feels awkward when dealing with parents of children who are indicated towards the characteristics of students with special needs. This is intended because the school's justification is clearly based on the results of direct psychological tests by experts. It's not just guessing and guessing with the naked eye. All documentation results should require authentic and accurate evidence and data.T

The active participation of parents and outsiders, such as school counselors and psychologists, is indispensable for the success of inclusive education. Schools that are the organizers of inclusion need to establish good communication with parents of students with special needs [44]. In addition, schools need to involve families in their child's educational process. Cooperation with psychological institutions or counseling guidance in schools is also important to ensure that students' social and emotional needs are met [45]. Lack of communication and understanding of inclusive education is often an obstacle, especially when parents do not fully understand or accept their child's condition. Therefore, good cooperation between schools, families, and outside parties is needed to provide optimal support for students with special needs [46].

4. Conclusion

This research reveals that there are still various obstacles in the implementation of inclusive education, ranging from limited human resources, unclear government policies, inadequate curriculum implementation, to school culture that is not fully inclusive. All of this shows that inclusive education requires more comprehensive support, both in terms of government policies, increasing human resource capacity, and the appropriate use of technology. The active participation of all parties, including families and related institutions, is essential to ensure the success of inclusive education.

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2. Keputusan Penerimaan dan revisi minor

Date: 20 November 2024
Ref. No. 2590-EAST-3355/24

Dear Suripah Suripah

Author (s): Suripah Suripah, Zetriuslita Zetriuslita, Aulia Sthephani, Miranti Eka Putri, Erika Desvianti

Subject: Conditional acceptance with the subject of submission for Article processing charges

I would like to extend my congratulations to you.

We are delighted to notify you that your article titled " *Technology Integration to Improve Numeracy Skills of Dyscalculia Students: Obstacles of Inclusion Schools in Indonesia*" has been accepted for publication in an upcoming issue of the *Edelweiss Applied Science and Technology (ISSN: 2576-8484)*, based on the feedback provided by the reviewers.

Kindly ensure to make the payment at the earliest convenience. Upon receipt of payment, we may proceed with the publication process.

We are grateful for your cooperation. We look forward to your response.

Sincerely,

melissa fernandes

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Reviewer(s)' Comments to Author
Reviewer: 1

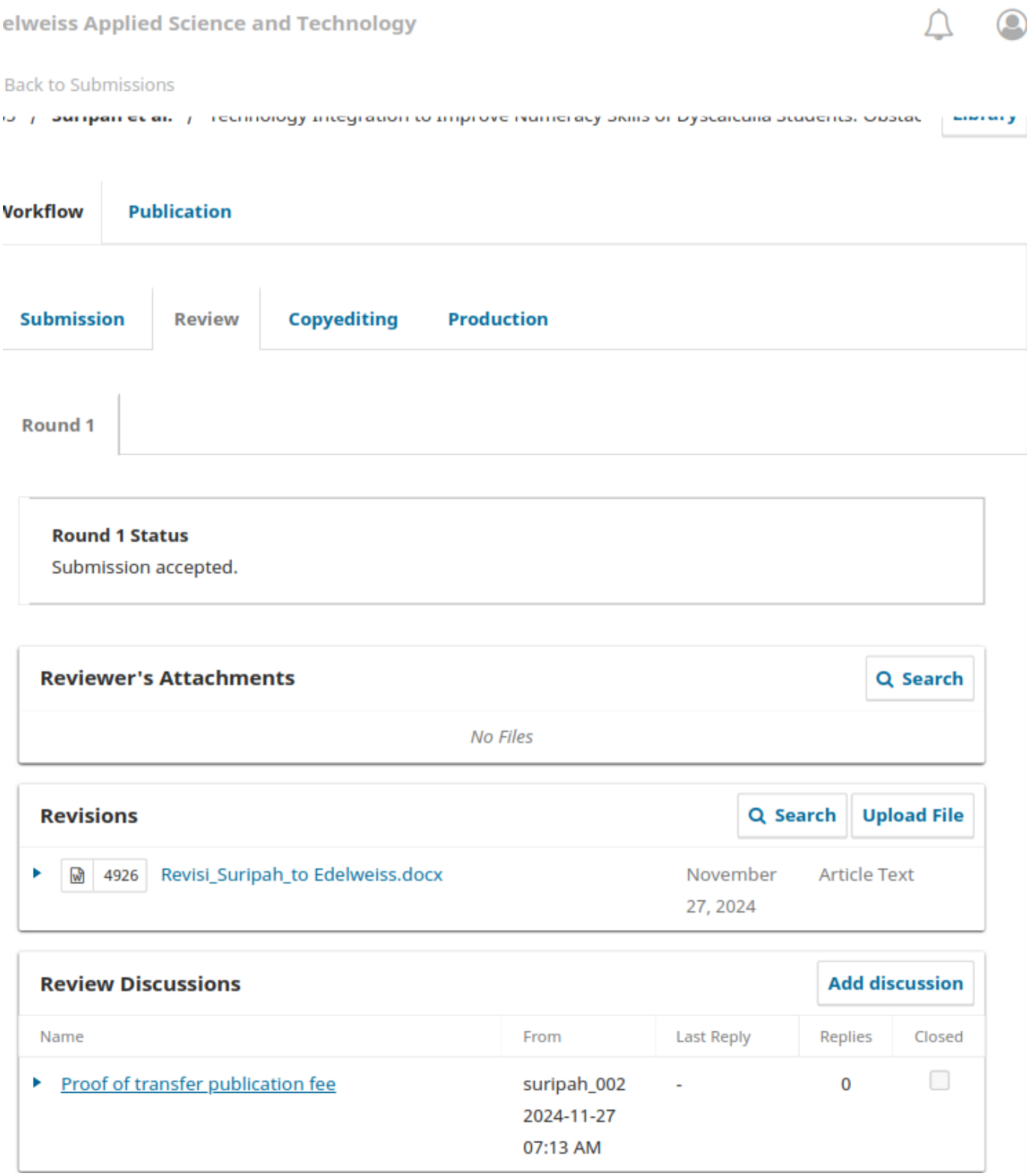
1) It is suggested to revised abstract by including the material on Purpose, Design/Methodology/Approach, Findings, Conclusion, and Practical Implications.
2) Provide coding to participants to make it easier to code in the discussion
3) Proofread the paper from the perspective of language, vocabulary and punctuation.
4) Sometimes Quizizz is written as Quiziz (page 1) or Quiziziz (page 7).
5) Follow the formatting of the journal, in particular, make sure that the labels of the tables
6) The references need to meet the journal's referencing style.

Reviewer: 2

1) The introduction is too long and contains much non-essential information.
2) Add definitions of each subtheme, the number of informants who mentioned it, or exemplar quotes.
3) Use a concise table presenting theme–subtheme–exemplar quotes for better clarity.
4) References are inconsistent.
5) Link the findings to the theory of inclusive pedagogy (Florian).
6) Relate the identified teacher barriers to teacher readiness and Technological Pedagogical Content Knowledge (TPACK).
7) There are overly long and ineffective sentences.

Examples that need improvement:
"Human resources are one of the important components that need to be considered..."
→ This sentence should be written in a more concise and academic manner.
"There is one student with special needs who actually has a higher level of calculation speed…"
→ This requires rephrasing so it does not sound informal.

3. **Submite Perbaikan**



Technology Integration to Improve Numeracy Skills of Dyscalculia Students: Obstacles of Inclusion Schools in Indonesia

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Abstract: Several studies related to numeracy and technology have been carried out a lot, but researchers have not paid much attention to inclusion organizers in developing numeracy skills in dyscalculia-students by integrating technology. Therefore, this study aims to describe what obstacles are experienced by inclusion schools in developing the numeracy skills of technology-integrated dyscalculia students. This study is a qualitative study with a phenophysiological approach. The subjects of this study are 6 Headmasters and 12 teachers of inclusive schools in 6 junior high schools in Riau Province, Indonesia. Data was collected using interviews and Focus Group Discussion (FGD). Based on the results of data analysis, it can be concluded that there are several obstacles as follows: First, the limitation of human resources. Second, government policies and regulations have not presented comprehensive program guidelines. Third, the implementation of the curriculum in the learning process is inadequate. Fourth, the inclusive school culture is not conducive and some teachers are not used to integrating technology in mathematics learning for children with special needs. Fifth, the numeracy skills of dyscalculia students still has problems in calculation operations, and comprehension of mathematical symbols, and Sixth, the participation and support of the family have not been well communicated.
Keywords: *dyscalculia students, inclusion, numeracy skills, obstacles, technology integration*

1. Introduction

The development of the current learning paradigm requires technology to help the implementation of education and the achievement of learning goals. Various ways are used by teachers to integrate technology in learning in order to facilitate students in practicing their numeracy skills. One of the media that can be used by teachers is to integrate technology using the Quizizz application.

According to [1–5] technology integration in the form of assisted learning media the Quizizz application is defined as a game-based educational application, including many game activities into the classroom and making the classroom interactive. In addition, the Quizizz application is also able to motivate students to compete academically. The implementation of learning can be done in the classroom on electronic devices. Through Quizizz, students can actively interact and facilitate discussions [6–8] The use of technology in learning, especially mathematics, is highly dependent on the teacher's ability to teach and operate the media used. The use of good learning media is believed to have an effect on students' abilities. Students can use learning media not only in the classroom, but can access outside the classroom. The use of Quizizz can also be an alternative to improve the numeracy skills of students, both normal students and students who experience Dyscalculia.

Numeracy skills is an ability related to calculation operations and applying skills in daily life [9, 10]. In addition, numeracy skills are related to self-confidence, and the ability to work in the realm of spatial information to make effective decisions in everyday life. Numeracy skills are beneficial for all aspects of life. Numeracy skills for normal students are certainly not an obstacle, because they can catch directly quickly both through regular learning and with the integration of technology. It is different with students with special needs, of course, it needs more attention from the inclusion education provider appointed by the government.

Inclusion Education [11, 12, 14] It is a school that accommodates all students regardless of physical, intellectual, social-emotional, language, or other conditions. This includes other disabled and gifted children. The government through [14] about inclusive education, providing opportunities for children with disabilities, and having special intelligence to participate in education in an educational environment together with other students in general. Inclusion education provides the widest possible opportunities for special needs without [15–19] This is in line with the enactment of the independent learning curriculum. In accordance with the purpose of the enactment of the independent curriculum is to facilitate individual differences. Students are expected to no longer feel discriminatory treatment in getting the right to learn.

In schools that provide inclusion, students with special needs learn together with regular students, the challenge of developing numeracy skills becomes more complex [20]. Students with special needs may have barriers in the learning process that require different approaches and teaching strategies than the average student [21]. Therefore, math teachers in inclusion schools must be able to adapt their teaching methods to meet the diverse needs of the classroom.

However, in reality, inclusion education is still not paid much attention. Teachers who teach in inclusion schools are still constrained and experience difficulties and obstacles to develop students' numeracy skills [22, 23] These obstacles can include limited knowledge and skills in inclusive learning strategies, lack of adequate support and resources, and difficulties in assessing and adapting teaching approaches to suit the needs of each student [29, 30]. In addition, teachers also often face challenges in creating an inclusive and supportive learning environment, where all students feel welcome and motivated to learn [26, 27].

These obstacles not only affect the effectiveness of the learning process, but can also have a negative impact on students' numeracy development, especially for those with special needs. Therefore, it is important to identify and understand the obstacles faced by mathematics teachers in learning in schools that provide inclusion. With a deeper understanding of these obstacles, it is hoped that the right solution can be found to improve the quality of mathematics learning in inclusion schools. The effect is that all students can achieve their maximum potential in the field of mathematics.

2. Research Methods

2.1 Research Design

This study is a qualitative study with a phenophysiological approach. This study was conducted to obtain an overview of teacher obstacles in implementing learning for students with special needs in inclusive schools in technology-integrated mathematics learning. The primary data source in this study is information that is in accordance with what was studied through Focus Group Discussions (FGD) and interviews.

2.2 Participans

This research was conducted in 6 inclusive schools in Riau province. The participants of this study were 6 Headmaster and 12 mathematics teachers. The initial stage was the Focus Group Discussion (FGD) and Interview activities. To obtain in-depth information about the challenges of inclusive schools in integrating technology to improve the numeracy skills of Dyscalculia students, we conducted interviews with 6 Headmaster and two mathematics teachers from each inclusive school. To make it easy to understand, participant writing is coded as follows.

Table 1.
Participant Coding

Participan	Coding	Participan	Coding
Headmaster 1	H1	Teacher 4	T4
Headmaster 2	H2	Teacher 5	T5
Headmaster 3	H3	Teacher 6	T6
Headmaster 4	H4	Teacher 7	T7
Headmaster 5	H5	Teacher 8	T8
Headmaster 6	H6	Teacher 9	T9
Teacher 1	T1	Teacher 10	T10
Teacher 2	T2	Teacher 11	T11
Teacher 3	T3	Teacher 12	T12

2.3 Data Collection and Analysis

The data collection technique in this study uses interviews and FGD. Before conducting interviews, the research began with an FGD with the principal and teachers of the inclusion organizers. After the FGD was carried out, and found several problems related to the obstacles experienced by the inclusion organizing schools, followed by interviews with each of the principals and teachers who were the target

of the research. After all activities are completed, it is continued with comprehensive data analysis.

Data analysis techniques are carried out by collecting data, separating, looking for patterns, finding what is important, and determining what can be conveyed to others [28]. The detailed data analysis steps are carried out as follows: (1) data collection; (2) data reduction; (3) data presentation; and (4) drawing conclusions. The data obtained from the interview results are recorded in field notes consisting of two aspects, namely description and reflection. Description notes are natural data that contains what the researcher sees, hears, feels, witnesses and experiences himself without any opinion and interpretation from the researcher about the phenomenon encountered. Meanwhile, reflection notes are records that contain impressions, comments and interpretations of the researcher about the findings found and are the material for the data collection plan for the next stage. To obtain this record, the researcher conducted interviews with several informants who were considered to know about the problem to be researched. The theme in exploring the obstacles faced by the inclusion organizing school is (1) Limited human resources; (2) Government policies and regulations; (3) Implementation of the curriculum in the learning process; (4) School Culture and Integration of Technology in Mathematics Learning; (5) numeracy ability of students-dyscalculia; and (6) Family participation and support. The interview data obtained in the final analysis results were concluded based on the results of data reduction obtained based on the relationship between patterns of sub-sub-themes which were then determined accordingly.

3. Results and Discussion

This research stage was carried out to explore the obstacles faced by inclusion schools in organizing learning, especially mathematics learning. The results of the interviews were grouped according to the five themes that became interview material for cross-checking, then reduced and searched for sub-sub-themes. After that, it is connected between the subthemes to get the final conclusion. In this study, five themes were found to explore the obstacles faced by the inclusion organizing schools. namely: (1) Limited human resources; (2) Government policies and regulations; (3) Implementation of the curriculum in the learning process; (4) Integration of technology in mathematics learning; (5) numeracy ability of students-dyscalculia; and (6) Family participation and support. Each of the themes found is described and presented as follows.

3.1 Human Reseource Limitations

Human resources are one of the important components that need to be considered in the implementation of inclusive education. However, the real conditions on the ground often do not match expectations. One of the main obstacles is the limitation of human resources, including funds, personnel, and facilities. To provide quality inclusive education, schools need dedicated teachers of inclusive education, adaptive equipment, and infrastructure that supports physical accessibility. It is undeniable that the existence of special students who join regular classes together with students in general, requires more attention. However, more attention to existing children with special needs has not been fully realized. This, of course, is an obstacle faced by the organizing school. Based on the results of the analysis of research data, there are four sub-themes found for the theme of Human Resource Limitations as presented in the following Table.

Table 2.
Reduction results related to human resource limitations

Item	Sub-Theme	Relationship between sub-themes
1	There is a lack of special training to teach students with special needs.	Human resources in inclusive schools are still limited, both understanding from teachers in particular, as well as infrastructure to provide inclusive education.
2	We don't understand how to handle special needs students because we are regular teachers.	
3	The teacher personnel in our school are limited, not enough for *the teaching team*.	
4	Our school does not have special accompanying teachers, nor adequate equipment.	

Some examples of statements by school principals and teachers that support the theme of limited human resources are as follows.

"We have not received any more training, except for the early days when it was appointed by issuing a decree as an inclusive organizing school..."(H1). " I was invited and participated in training, once when the school wanted to be decreed as one of the inclusive organizing schools, so I didn't understand it yet... (T1). It is different from the statements delivered by teachers and other school principals. "… In addition to the absence of accompanying teachers, we lack adequate facilities to support students with special needs." (H2). In addition, teachers feel overwhelmed, if they have to face students with special needs alone in class without assistance or helpful teacher friends. As a result, new learning can be carried out in a standard manner, not much improvisation.

Based on several statements delivered by the principal and teachers, there are obstacles in terms of human resources. Lack of training, limited teacher personnel with a large student capacity in one group, make teachers less effective in learning in the classroom. In addition, the lack of skills possessed by teachers makes teachers sometimes confused in dealing with problems that occur when students with special needs need special treatment. Apart from the understanding and skills of teachers, the limitations of facilities and accessibility are obstacles for inclusive education providers. This finding is in line with the opinion [41,25] hat one of the obstacles experienced by some schools that provide inclusion is that it is not accompanied by the availability of trained teachers provided to accompany students with special needs.

3.2 Government Policies and Regulations

Some education systems may have policies or regulations that are not supportive inclusion practices. Changes in education policies and changes in school organizational culture are often necessary to facilitate inclusive education. To achieve the goals and implement the policies made by the government, inclusive schools need clear directions and policies. However, from the results of the initial study, the school stated that for the implementation of education itself, there are no comprehensive guidelines and policies from the government. Meanwhile, schools appointed as education providers are still fumbling in terms of the implementation of learning, both in terms of learning policies, as well as assessments of students with special needs received by the school. Based on the results of the analysis of research data, there are three sub-themes found for the theme of government policies and regulations presented in Table 3.

Table 3.
Reduction results related to government policies and regulations

Item	Sub-Theme	Relationship between sub-themes
1	Guidelines or guidelines that are not yet clear, guidelines is not comprehensive.	Government policies and regulations have not presented comprehensive program guidelines, ranging from programs to funding support to facilitate students with special needs.
2	There are no clear policies and regulations related to inclusive education programs.	
3	Not having enough funds to implement policies that support students with special needs.	

Inclusive schools do not have clear policies and regulations related to guidelines and programs. Therefore, the school has made its own policy to help implement learning for students with special needs who are among other regular students. This statement is supported by the results of the interview as follows.

"I myself and the teacher component and also the Counseling Guidance are still confused, there is no inclusive program that is specifically programmed..." (T2, T6). "Initially, we tried to deal with students with special needs by providing makeshift learning aids, such as pictures or math props, the important thing is that the students can experience changes..." (H1). Another case is the mathematics teacher whose class has an Autism category ABK. What is done is to try to bring the student to study on his own in a quiet room. This is done because at a certain time student "A" goes berserk and does not want to study with other friends in the class. "…… When my students have tantrums and don't want to study with other friends in class, I take them to another place to calm down and bring their own learning, then

other students in the class are given a continuation of the assignment according to the material they are studying at that time.." (T3).

Based on several statements from interviews with school principals and teachers, it indicates that due to the lack of comprehensive guidelines and regulations from the government, each school finally made its own policy breakthrough. The school said that cognitive learning outcomes had not been met. At least in terms of affective and psychomotor aspects, students with special needs can be facilitated even though it is not optimal. At least in terms of affective and psychomotor aspects, students with special needs can be facilitated even though they are not optimal. Initially, the school did not have a target cognitively for students with special needs.

The government policies and regulations that are not yet comprehensive are another challenge for schools in carrying out inclusive education. Based on the results of the interviews, the inclusion organizers are still confused in implementing inclusive education programs because there are no clear guidelines from the government. This finding is in line with the research of [41,42] that in particular, there is no comprehensive guidance for inclusive organizers. Schools are forced to make their own policies to accommodate the needs of students with special needs. The absence of structured guidelines results in inclusive education programs running as they should, with schools adjusting policies based on their internal conditions [32]. The lack of allocation of funds from the government to support the implementation of inclusive education is also one of the main obstacles. Therefore, schools must be creative in optimizing limited resources.

3.3 Curriculum Implementation in the Learning Process

Inclusive schools must develop a curriculum that suits different levels of students' abilities and needs. This can be a challenging task and requires additional resources. The curriculum as a handle and foundation in implementing rules and learning, is an important concern to become a signpost in the implementation of inclusive education, in particular. This aims to ensure that the learning process can be carried out properly in accordance with the learning objectives to be achieved. Based on the results of the interview analysis, there are 6 sub-themes obtained for the theme of curriculum implementation in the learning process which are presented in detail in Table 4.

Table 4.
Reduction results related to curriculum implementation in the learning process

Item	Sub-Theme	Relationship between sub-themes
1	The curriculum used in schools is not adequate to meet the needs of students with special needs	The learning curriculum used by inclusion education providers is inadequate.
2	It is still difficult to assess the progress and achievements of students with children with special needs.	
3	Evaluation and assessment methods that are not appropriate with various students	
4	Classroom management is not effective, there are students with different levels of attention.	The learning process has not been able to carried out effectively.
5	Inadequate teaching materials and materials, including the availability of textbooks and software.	
6	Limited time, students with special needs need additional time to pay attention.	

The opinions of teachers who support the theme of curriculum implementation in the learning process are as follows.

"… Because in that class there were 40 students and even 46 students, so I was confused between achieving understanding or completing the material... it is difficult to manage the class" (T1). It's different in other schools.... "Our class is indeed set up with small classes, but this small number is only 20 and 16 students, the energy exceeds the teaching of students with large classes... some students who

are "hyperactive students" contaminate classroom conditions" (T4). As one of the effects of a less conducive classroom is that the learning process becomes quite disrupted. To calm a noisy classroom is quite time-consuming to learn. As an impact, learning becomes less effective, often lacking time even though the material that must be achieved has not been completed.

One of the other obstacles in the aspect of the curriculum and learning process is the constraint of students with special needs who do need more attention in condition. The curriculum implemented is not fully adequate to meet the needs of students with special needs. Teachers also have difficulty assessing the progress of students with special needs, because the evaluation methods used are not appropriate for students with various levels of ability. One of the other obstacles is the lack of special accompanying teachers for children with special needs [33].

In addition, classroom management is a challenge in itself. The large number of students in one class (reaching 40-46 students) makes it difficult for teachers to manage student attention, especially when there are students with special needs who need special handling. Teachers are also still constrained in providing relevant and adequate teaching materials, as well as lack of time to give extra attention to students with special needs [45,46].

3.4 School Culture and Technology Integration in Learning

A school culture that does not support inclusion can be a major obstacle. This includes negative attitudes and perceptions from staff, students, and parents towards students with special needs. Inclusive education requires positive and inclusive cultural change throughout schools. In addition, inclusive education providers must not ignore the importance of technology integration to support the achievement and smooth running of programs planned by schools and supporting elements. Based on the results of the interview, there are 7 sub-themes related to school culture and the integration of technology in learning presented in Table 5.

Table 5.
Reduction results related to culture and technology integration in learning

Item	Sub-Theme	Relationship between sub-themes
1	There is a school culture where there is still stigma and discrimination against students with special needs.	School culture, and public awareness, including parents who are not yet conducive, are obstacles to the implementation of inclusive education.
2	The inability of some schools to accept difference.	
3	Lack of involvement of parents and the community in supporting inclusive education.	
4	Lack of awareness of teachers and staff in applying awareness and inclusive principles.	
5	Lack of adequate access to technology.	Teachers have not yet understood how to integrate the right technology for inclusive learning.
6	Teachers do not have enough understanding of how to integrate technology into inclusive learning.	
7	Teachers do not always have an understanding of the principles of technology.	

Some of the interview results that support the theme of school culture and the integration of technology in learning are described as follows.

"...Some parents have been cooperative with the school, but there are also parents who have not been able to accept the reality of their child's condition..." (H3). Furthermore, the reality that occurred was resistance from parents, who were kindly asked to come to school for discussion, but what existed was a bad statement from the parent of one of the students with special needs. From that incident, the school as one of the inclusion organizers actually felt that their efforts were not appreciated by the community and parents. And on the other hand, there is one of the parents who meets the researcher directly and politely. A mother said "thank you for the attention and assistance given to my child, she said with tears in her eyes, so far there has not been any extraordinary form of attention given like this..." (Mother). Even one of the teachers added the truth of the mother's statement with the statement "... One of the

special needs students in my class, should not be tired... If you are tired, you usually have nosebleeds and feel dizzy.." (T6). In fact, the teacher must provide Tissu to prepare for when at any time something happens that cannot be done by the student with special needs.

Looking at the statements netted from the results of the interviews, it indicates that school culture needs to continue to be improved and socialized en masse for the sustainability of inclusive education. This inclusive education is not only the task of the school providing education, but our task with all components. All elements, schools, staff, parents and also the community must support each other to be able to ensure the comfort of students with special needs who come with other regular students.

Related to the integration of technology in learning in schools that provide inclusion, it can be obtained from the results of interviews with principals and teachers as follows.

"I don't want to apply technology in learning, but the classroom conditions are not yet possible." (T8, T10). Furthermore, in other schools, information was obtained that,... "I more or less understand technology because I am also taught when I am in college, but how to teach children with special needs, I don't have an understanding yet..." (T6, T12). The statements of these teachers are certainly justified by school officials, again there needs to be intensive training and self-updating related to inclusive organizers. At least there needs to be a warm-up for teachers who have just joined after the decree appointing this inclusive organizer is carried out. This will be very useful for the sustainability process and existence of education for children with special needs in the future.

A school culture that does not fully support inclusion, such as stigma or discrimination against students with special needs, is one of the main obstacles to the implementation of inclusive education [36, 37]. Not all parents of students with special needs are ready to accept their child's condition, and some show a lack of cooperation with the school [38]. This indicates the importance of further socialization and education to all elements of schools and society to create a more conducive inclusive culture.

Technology integration can be an effective tool in inclusive learning. However, there are still many teachers who still do not have enough understanding of how to integrate technology into learning, especially for students with special needs [39]. App integrations like Quizziz can be an alternative, but further training is needed for teachers to maximize their use in inclusive education. Technology integration is also believed to be an alternative in helping to develop the numeracy skills of students with special needs [40].

3.5 Residual Numeracy Ability-Discalculia

A student's numeracy ability refers to a person's ability to understand, use, and manipulate numbers and mathematical concepts in a variety of everyday situations. It includes a basic understanding of numbers, mathematical operations (addition, subtraction, multiplication, division), measurement, pattern understanding, mathematical problem solving, and the ability to make connections between mathematical concepts and real-life situations. Strong numeracy skills are essential in education, as they are the basis for a deeper understanding of mathematics at a higher level. Dyscalculia is a neurological condition that affects a person's ability to understand, process, and use mathematical concepts effectively. It is a condition similar to dyslexia, but it has to do with mathematics. Individuals with dyscalculia may have difficulty understanding mathematical symbols, remembering mathematical facts, and executing basic mathematical operations. They can also have difficulty understanding mathematical relationships and identifying patterns. Dyscalculia is not just a mistake in learning mathematics, it is a specific disorder that affects mathematical ability fundamentally. Specifically, for the results of the interview, two sub-themes were obtained that led to the numeracy ability of Dyscalculia students. The details related to the sub-theme are presented in Table 6 below.

Table 6.
Reduction results related to students' numeracy ability-dysclulia

Item	Sub-Theme	Relationship between sub-themes
1	The numeracy ability of some students in need cannot be equated with other regular students.	Numeracy skills still have problems with calculation operations, as well as understanding mathematical symbols.
2	For the operation, the addition and multiplication calculation is only a two-digit stage.	
3	It must be repeated, including the understanding related to symbols and tables.	

The completeness of interview data that supports sub-themes related to numeracy and dyscalculia skills is as follows.
"....I have to be patient if I teach, I have to wait for him to remember and count from his ten fingers to keep it in his head..." (T6). However, there is the opposite, there is one student with special needs who actually has a higher level of calculation speed and mastery of mathematics than other regular students. This is also proven in the final test results of numeracy ability to get a score of 82, and all questions of the five existing questions can be solved even though there are still incomplete ones.

The numeracy skills of students with special needs, especially those with dyscalculia, require more attention. Dyscalculia is a neurological condition that affects a student's ability to understand and process mathematical concepts. The findings of the study show that some students with special needs have difficulty understanding basic calculation operations, such as addition and multiplication of two numbers, as well as in recognizing mathematical symbols [41,42].

Teachers who handle students with special needs in mathematics learning need to be more patient and repetitive in delivering material. Some students need repetition over and over again to understand basic concepts. However, there are also findings that some students with special needs have higher mathematical abilities than other regular students, so an individualized learning approach is very necessary. This finding is supported by [43] the fact that some inclusive students actually have certain advantages, for example, memorizing and calculating quickly, and some write very neatly. Moreover, there is an important role for parents in accompanying their children.

3.6 Participation, External and Family Support

Involving parents in the inclusion process is key. However, good communication with parents and understanding of their child's needs can be challenging. In addition, inclusive schools often require support from external institutions or organizations, such as research institutions or government agencies, to overcome the various obstacles they face. Some students with special needs also need outside support such as psychiatrists. Additional psychosocial to address their social and emotional challenges. Schools need to provide this support so that students can feel safe and integrated in the school environment. Lack of awareness and understanding society and even parents often do not have enough understanding of the concept of inclusion and may perceive it as a threat to their children's education. As for the details related to the sub-theme of Participation, external and family support is presented in Table 7.

Table 7.
Reduction results related to participation, external and family support

Item	Sub-Theme	Relationship between sub-themes
1	There needs to be good communication with people parents of students with special needs.	Inclusive education providers need to establish communication with various parties and active participation with families.
2	Parents prepare special equipment that students with special needs are needed.	
3	There needs to be cooperation with guidance and counseling and school psychologists	

Based on the results of research that supports the theme, there are several statements that corroborate the sub-theme, among others, as follows.

"I feel relieved that there are researchers who help our students, even the psychologists included in this study add to the insights of all of us." (H1). Likewise with other schools, principals and teachers feel that there is additional knowledge when they receive material presentations from psychologists who help with how to recognize the characteristics of students with special needs, and how to handle problems when problems occur during the dispersal process or when they are outside the classroom. The response of one of the parents of students with special needs was also very positive when involved in this research activity. Parents feel appreciated, and feel that their children are cared for. ".. Which parent wants to have a special child... He said while shedding tears. We are still grateful that we can still go to school in the same place as other friends. Parents also deserve to be grateful for a classroom environment that can accept the existence of students with special needs in their midst.

Based on these findings, it indicates that participation from all parties is urgently needed to help implement inclusive education. The participation of parents, and other parties such as cooperation with guidance and counseling teachers and school psychologists needs to be considered. In fact, the school can budget for the allocation of education funds to collaborate with school psychologists so that they can detect the existence of children with special needs early. Thus, the school no longer feels awkward when dealing with parents of children who are indicated towards the characteristics of students with special needs. This is intended because the school's justification is clearly based on the results of direct psychological tests by experts. It's not just guessing and guessing with the naked eye. All documentation results should require authentic and accurate evidence and data.T

The active participation of parents and outsiders, such as school counselors and psychologists, is indispensable for the success of inclusive education. Schools that are the organizers of inclusion need to establish good communication with parents of students with special needs [44]. In addition, schools need to involve families in their child's educational process. Cooperation with psychological institutions or counseling guidance in schools is also important to ensure that students' social and emotional needs are met [45]. Lack of communication and understanding of inclusive education is often an obstacle, especially when parents do not fully understand or accept their child's condition. Therefore, good cooperation between schools, families, and outside parties is needed to provide optimal support for students with special needs [46].

4. Conclusion

This research reveals that there are still various obstacles in the implementation of inclusive education, ranging from limited human resources, unclear government policies, inadequate curriculum implementation, to school culture that is not fully inclusive. All of this shows that inclusive education requires more comprehensive support, both in terms of government policies, increasing human resource capacity, and the appropriate use of technology. The active participation of all parties, including families and related institutions, is essential to ensure the success of inclusive education.

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Authors: Suripah Suripah, Zetriuslita Zetriuslita, Aulia Sthephani, Miranti Eka Putri, Erika Desvianti
Title: Technology Integration to Improve Numeracy Skills of Dyscalculia Students: Obstacles of Inclusion Schools in Indonesia
Article No. 2590-EAST-3355

Sl. No.	Assessment principles	Score (0-10)
1.	Introduction	8
2.	Background of Study	7
3.	Literature Review	8
4.	Methodology	7
5.	Sampling	7
6.	Results	7
7.	Analysis	8
8.	Conclusion	9
9.	Recommendations	6
10.	References	6
	Total score (100)	**73/100**

RECOMMENDATION		
The following are indicative score ranges:		
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ACCEPTED WITH MINOR REVISIONS	* *Accept with minor revisions*	*: 60-80*
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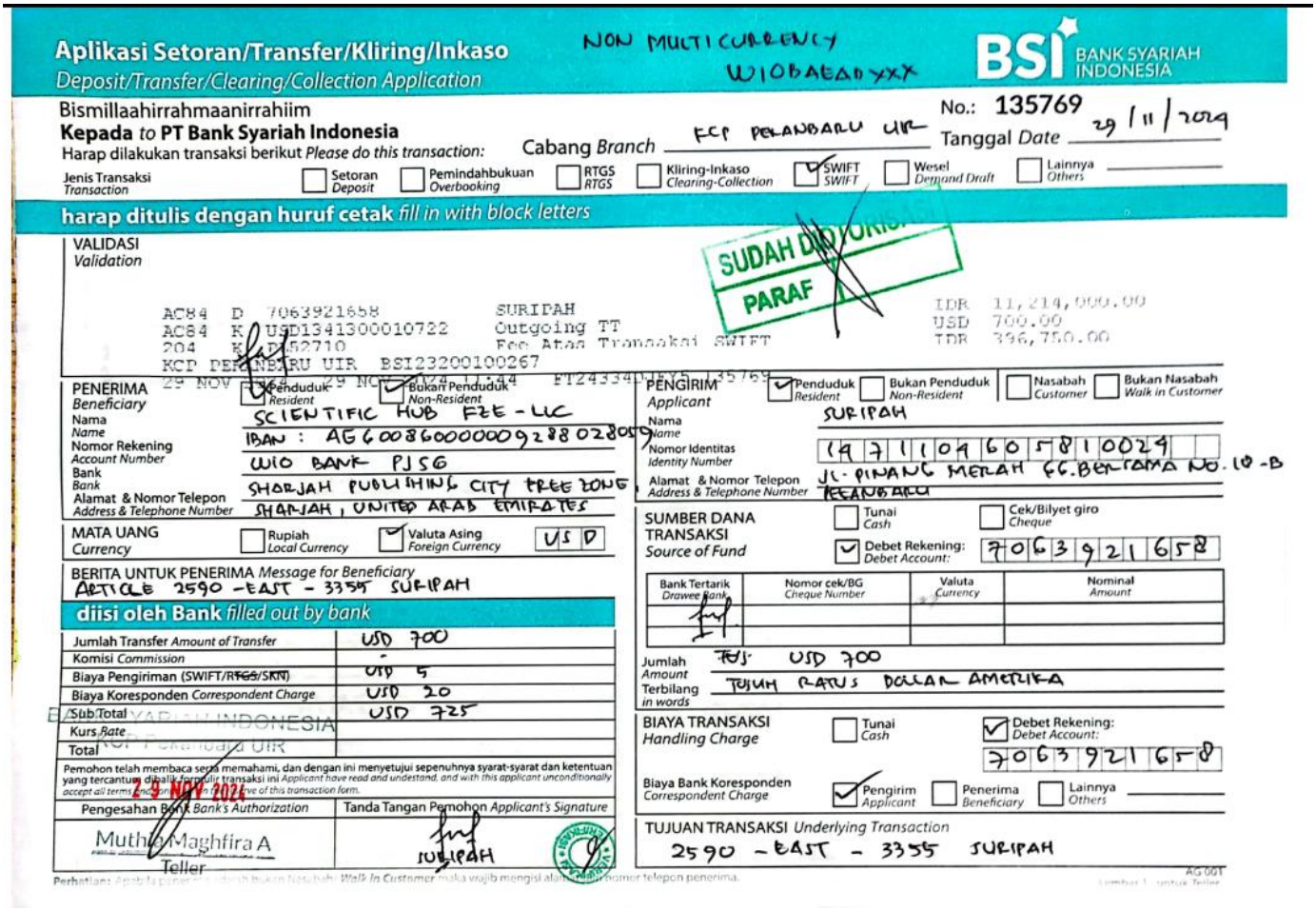

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No.: 135769
Tanggal *Date* 29/11/2024

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PENERIMA *Beneficiary*
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Nomor Rekening *Account Number*: IBAN : AE600860000009288028059
Bank *Bank*: WIO BANK PJSC
Alamat & Nomor Telepon *Address & Telephone Number*: SHARJAH PUBLISHING CITY FREE ZONE, SHARJAH, UNITED ARAB EMIRATES
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MATA UANG *Currency*: ☐ Rupiah *Local Currency* ☑ Valuta Asing *Foreign Currency* USD

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Komisi *Commission*	-
Biaya Pengiriman (SWIFT/~~RTGS~~/SKN)	USD 5
Biaya Koresponden *Correspondent Charge*	USD 20
Sub Total	USD 725
Kurs *Rate*	
Total	

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Muthia Maghfira A Teller	SURIPAH

PENGIRIM *Applicant*
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Nomor Identitas *Identity Number*: 1971109605810024
Alamat & Nomor Telepon *Address & Telephone Number*: JL. PINANG MERAH GG. BERSAMA NO. 10-B PEKANBARU
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Bank Tertarik *Drawee Bank*	Nomor cek/BG *Cheque Number*	Valuta *Currency*	Nominal *Amount*

Jumlah *Amount* Terbilang *in words*: Tujuh Ratus Dollar Amerika

BIAYA TRANSAKSI *Handling Charge*: ☐ Tunai *Cash* ☑ Debet Rekening: *Debet Account:* 7063921658
Biaya Bank Koresponden *Correspondent Charge*: ☑ Pengirim *Applicant* ☐ Penerima *Beneficiary* ☐ Lainnya *Others*

TUJUAN TRANSAKSI *Underlying Transaction*: 2590 - EAST - 3355 SURIPAH

Perhatian: Apabila pengirim adalah bukan nasabah *Walk In Customer* maka wajib mengisi alamat dan nomor telepon penerima.

AG 001
Lembar 1 untuk Teller

SURIPAH AMIN <rifah@edu.uir.ac.id> Fri, Nov 29, 2024 at 2:04 PM
To: Melissa Fernandes <editor@learning-gate.com>

Pekanbaru, November 29, 2024
Dear, Dr. Melissa Fernandes
Brooklyn, NY 11230, USA

Greetings From Indonesia
Here we send proof of Publication fee transfer on behalf of Suripah, et all manuscript ID. 2590-EAST-3355 entitled "Technology Integration to Improve Numeracy Skills of Dyscalculia Students: Obstacles of Inclusion in Indonesia"
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Learning Gate <editor@learning-gate.com> Fri, Nov 29, 2024 at 3:32 PM
To: SURIPAH AMIN <rifah@edu.uir.ac.id>

I received your article processing fee proof and revised file. We're beginning to format and edit your article. It will be published after the editorial process is completed.

Melissa Fernandes
Editorial Manager | Learning Gate
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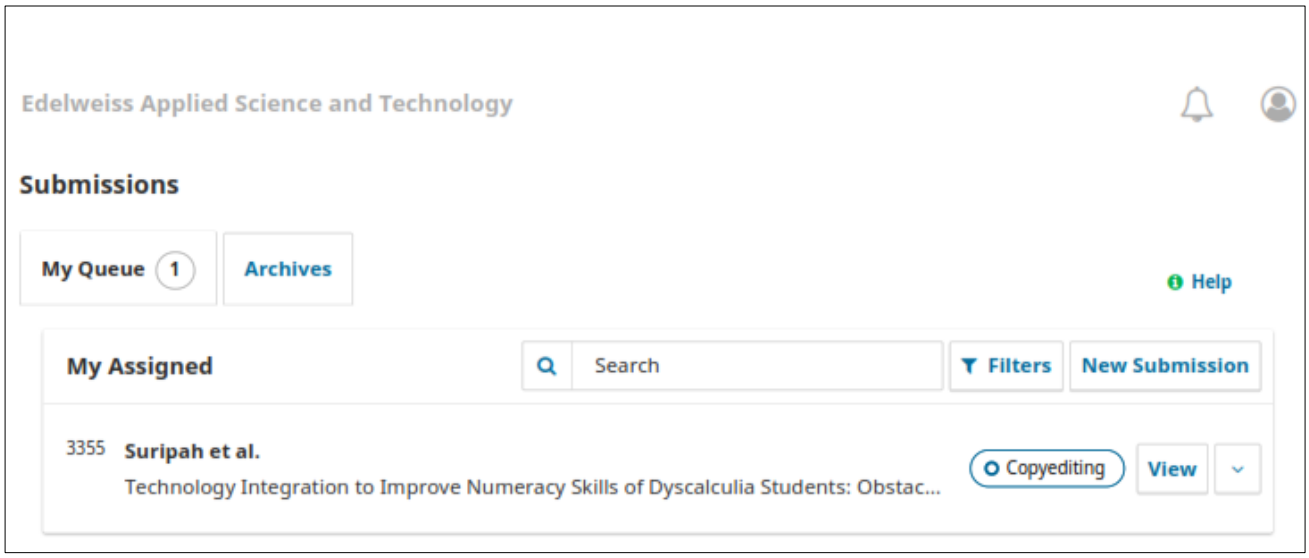
[Quoted text hidden]

6. Proses copy editing



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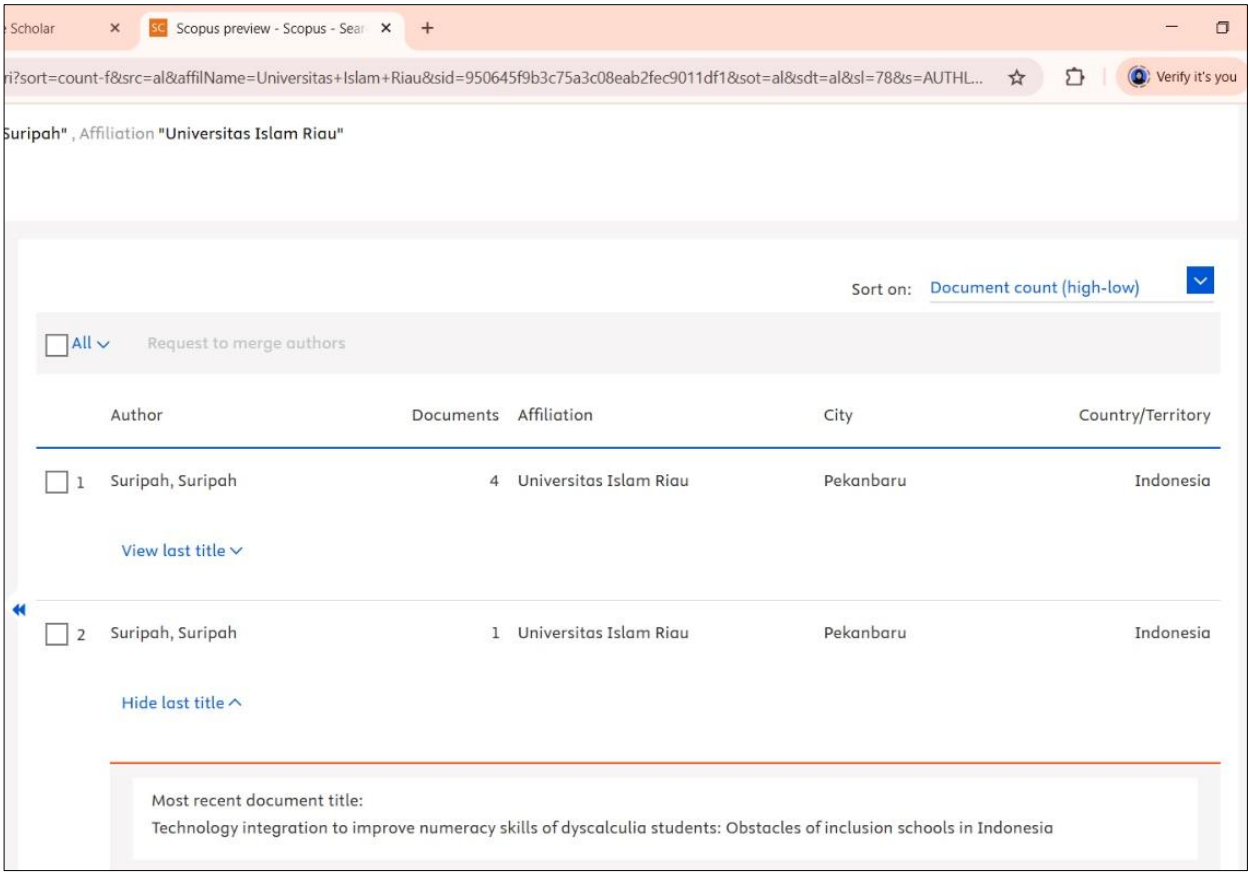
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