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Identification and Academic Assessment Models for Students with Specific Learning Difficulties in Inclusive Elementary Schools

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Abstract: This study aims to identify students with special learning difficulties in inclusive primary schools and develop assessment models. The research subjects were inclusive elementary school students in Sleman Regency. Methods of collecting data were observation, tests, interviews, and surveys. The results showed that 85 students (18.27%) were identified as having certain learning difficulties. Male students have more specific learning difficulties than female students (55.3%: 44.7%). Specific learning difficulties were found in reading (26 students or 22.10%); in writing (23 students or 19.55%); and in mathematics (36 students or 30.60%). In assessing difficulties in writing, the researchers applied the practice of handwriting (beginner writing), spelling, and expressive writing. Informal and formal assessments were used to identify mathematical difficulties.
Keywords: academic, identification, assessment, students with specific learning difficulties, inclusive, and elementary schools

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Introduction

The specific learning difficulty (SLD) was one of the problems in education. It involves the students' inability to complete their academic tasks appropriately. L'Ecuyer (2019), Willcutt (2019), and Larsen (2002) defined SLD as a disorder in one or more of the processes involved in understanding or using language, spoken, or written, which manifest in an imperfect ability to read, math or writing. Students with learning difficulties experience problems in specific and general academic tasks; both were caused by neurological dysfunction, basic psychological processes, and other causes so that the students have low learning achievements and were at a risk of failing her/his class. They can be manifested as primary conditions as difficulties in acquiring specific academic skills or as secondary conditions, comorbid to other developmental disorders (Grigorenko et al, 2020). Panshikar (2020), argues that SLD is a hidden disability.

SLD estimated that 10%-15% of the world population has learning difficulty (Shah & Trivedi, 2017; Indrarathne, 2019; Kormos, 2020). Sahoo et al (2015) state that prevalence of learning disorder ranges from 2%-10%. Male to female ratio for learning disorder is 2.3:1 (Shah, et al, 2019). Kauffman (2008) reveals that the prevalence of specific learning difficulties varies greatly, from 1% to 30%. In general, it has increased from year to year. IDEA 2004 requires that various conditions be considered indicative of a specific learning disability only if the student has been provided with learning experiences and instruction appropriate for the child's age or state-approved grade-level standards (Salvia et al, 2010; Grigorenko et al, 2020).

In general, the purpose of identification was to gather information whether a child has specific learning difficulties or not. Children may experience specific learning difficulties, of course, when compared to other regular children of the same age. Early identification and screening are crucial to the prevention or mitigation of adverse secondary consequences of SLD (Sanfilippo, 2020). Ghozali (2003) states that the results of identification would be assessed, and some of which would be used as the basis for the preparation of learning programs in accordance with the abilities and inabilities of children with

specific learning difficulties. Identification could be interpreted as recognizing. In addition, it was interpreted as a screening process while the assessment was defined as filtering. Identification was carried out by parents, teachers, and other education personnel as an effort to conduct a screening process for children who experience abnormalities (physical, intellectual, social, emotional, and behavioral) in order to provide appropriate educational services.

Assessment of SLD includes a detailed clinical evaluation followed by standard psychometric assessments of child's cognitive abilities and academic skills (Shah et al, 2019; Dueker, 2022). Manning (2001) argues that in the effort to implement assessment, the identification of children with specific learning difficulties was carried out for five objectives, namely (1) screening, (2) referral, (3) classification, (4) planning, and (5) monitoring. Identification could be done based on observable symptoms such as: physical symptoms (visual, hearing, speech impairments; malnutrition; and others); behavioral symptoms (instable emotion, negative social behavior/truant/fighting); learning outcomes (low learning achievement resulting in failing his/her class). One way to identify was by collecting data on students, using several techniques. Observation of attitudes and behavior could be done by completing the checklist in accordance with tendencies that were assumed to be deviant.

There were several steps to identify children with SLD. Munawir (2007) states that about the identification of school-age children who have not yet attended school or dropped out, the school needs to do data collection in the community, collaborating with the Head of Villages, Neighborhood Units, Community Units, and Head of Integrated Health Service Post. If the children with specific learning difficulties were found in the data collection, the researchers discuss the problems with parents, school committee, and local village officials to determine the follow-up. Fletcher & Miciak (2019) argues that in the assessment process, teachers can use a variety of assessment tools and strategies to gather relevant functional, developmental, and academic information about the child, including information provided by the parent (comprehensive data-gathering process).

Patto (2003) argues for students at schools the identification was done by collecting data on children; at this stage the teacher records data on the student condition in the class (based on the visible symptoms). Loughlin (2003) states that assessment for children with specific learning difficulties was a systematic process using relevant instruments to determine children's learning behaviors for the purpose of placement and learning. All information related to individuals must be collected; and hence, the assessment of education for children with specific learning difficulties was an interdisciplinary effort involving various professions, such as speech therapist and psychologist.

Assessment of students' learning difficulties was a process of gathering information before the learning program was organized. It was intended to understand the students' excellence and obstacles in learning, so that the program was expected to meet their learning needs. Lerner (2007) states an assessment was carried out when a child with specific learning difficulties has not obtained a lesson. Also, it could be done after the detection results saying that he/she was estimated to have specific learning difficulties. The assessment was not merely a test, but the test was a part of the assessment. In line with this, Marnat (2003) defines assessment as the collection of information that helps individuals make decisions. Assessment in educational settings was a multifaceted process that involves more than administration of a test.

The description above shows that assessment was an attempt to gather relevant information in order to understand or to determine an individual's condition. In the field of education and children with specific learning difficulties, assessment was a complex process to complement the results of tests administered to students. In addition, assessment has different meanings and was far broader than diagnostic terms such as tests, and evaluations. On the other hand, Marnat (2003) argues that in the assessment process there were four aspects of important questions that must be revealed related to the condition of an individual. The inquiries were (a) what abilities or skills he/she already has, (b) what obstacles or difficulties he/she experienced, (c) why the obstacles or difficulties happen, (d) what needs (in terms of education and learning) should be met.

Considering the experts' opinions mentioned above, academic assessments for the education of children with SLD include curriculum-based assessments, an activity to find out the abilities that the students already have, the obstacles/difficulties they experienced, the background of why the learning obstacles and difficulties arise, and to know the learning needs in terms of certain learning materials within the scope of the school curriculum. Academic assessment is mainly focused on the three things, i.e., reading, writing, and math/numeracy assessments.

Marnat (2003) argues that a teacher who would conduct an academic assessment must understand the curriculum, the hierarchical order (vertical sequence), and the breadth of curriculum contents (horizontal sequence) of the subjects to be accessed. For example, when a teacher would assess the math skills of a fourth grader, the teacher must understand the curriculum, both vertically and horizontally. Without a deep understanding of the curriculum contents, it was impossible to conduct an assessment. In this paper, curriculum (academic) assessment was the subject of discussion.

Cases of specific learning difficulties, as the portrait of education in Sleman Regency especially in basic education, were shown by the high number of state and private elementary school students who repeat the class. However, the extent to which SLD identification methods are implemented at the district level is not well understood. There are problems in the identification process and the necessary inclusive education services cannot be provided to these students. The implications of this phenomenon become very interesting because it was contrary to the education equalization policy. In other words, the students who repeat could ruin the quota of the new students or students going to the higher grade. This certainly affects the level of education efficiency (Education Department of Sleman, 2014). It could be concluded that the problems of specific learning difficulties have an impact on the students' academic achievements, and generally affect the low efficiency and effectiveness of education.

Based on the background of the problem, the research objectives were to, (1) identify types of specific learning difficulties in reading, writing, and math/numeracy difficulties; and (2) obtain an assessment model that could be used to deal with students in the classroom. The scope of this study is learning difficulties that were not caused by physical limitations (abnormalities or developmental barriers), which were experienced by students in regular education in inclusive elementary schools.

Regarding specific learning difficulties, in the 2007 Individuals with Disabilities Education Act (IDEA), it was stated that SLD means a disorder in one or more basic psychological processes involved in understanding or using spoken or written language, which was manifested in imperfect abilities to hear, speak, read, write, spell, or to do mathematical calculations (Lerner, 2007; Hallahan et al, 2014). SLD defined as the difficulty in academic skills, such as learning, reading, comprehension and spelling difficulties, written expression difficulties (such as multiple grammar or punctuation errors, inadequate paragraph organization and unclarified written expression), and math difficulties, including calculation and problem solving (DSM-V, 2013). These definitions could not be applied to children who have learning problems especially those caused by visual, motor, and hearing impairments; mental retardation; emotional disorder; and adverse environmental, cultural, or economic conditions (Graziano, 2004).

In the United States, the term 'learning disability' refers to a diagnosis of SLD, defined as a disorder in one or more of the processes involved in understanding or using language, spoken or written, which manifest in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations (L'Ecuyer, 2019). Broadly speaking, Kauffman (2008) classifies SLD into two groups: developmental and academic learning difficulties. Developmental learning difficulties include disorders of motor control and perception, language, communication, and social behavior. Difficulties in reading (dyslexia) vary but all were possibly caused by the brain malfunction. Kauffman (2008) states there were four characteristic groups of difficulties in reading: reading habits, mistakes in recognizing words, misunderstanding, and miscellaneous symptoms.

The assessment of the learning difficulties to read could be done using formal (Melekoglu et al, 2019; Grigorenco, 2019; Snowling et al, 2020) and informal instruments (Velasco, 2020; Delamain & Spring, 2021). Teachers could use informal instruments as a basis in providing remedial teaching. Informal assessment could be used to identify various errors in oral reading and reading comprehension. There were two models in teaching reading: for regular children and for children with specific learning difficulties. Kauffman (2008) states that the model of the teaching of reading to children in general includes some methods such as basic reading, phonics, linguistics, SAS, alphabetics, and language experience. Also, the remedial teaching models include Fernald, Gillingham, and glass analysis methods.

Before conducting an assessment, a teacher must first understand the reading skills as an assessment object. Hays (2007) argues that there were five aspects of reading skills: phonemic awareness, alphabet principles, accuracy and fluency, mastery of vocabulary, and reading comprehension. The five aspects of reading skills run sequentially, meaning that a certain skill was prerequisite for the next skill.

Dyslexia was diagnosed when the process of reading and spelling accurately and fluently develops imperfectly or with great difficulties. Dyslexia is a difficulty in learning to read aloud and to spell (Snowling, 2020). This difficulty is very noticeable in the children for their development in reading, writing, spelling, counting and poor performance on almost all reading and writing tasks (Fratini, 2017; Reis et al, 2020). It focuses on literacy learning at the 'word' level and implies that the problem was severe and continuous even though it has the right learning opportunity. Dyslexia was characterized by a reading difficulty in children. Dyslexia was one of the problems which often occur in children. Globally, dyslexic cases range from 5% to 17% in school-age children. About 80% of school-age children suffer from dyslexia. Uniquely, dyslexia cases were suffered by more boys than girls. The scale ranges from 2:1 to 5:1 (Solek, 2013).

Dyslexia was one type of learning difficulties in children in the form of reading disabilities. This disorder was not caused by the inability of vision, hearing, intelligence, or skills in language, but it was triggered by a brain disorder when processing the information, it receives. Signs in the risk group of dyslexia include difficulties to spell, distinguish letters **b** and **d**, write correctly (missing or extra letters in writing), remember the left and right direction, identify time (today, yesterday, tomorrow), remember sequence, follow verbal instructions, concentrate, have long attention span, communicate both orally and in writing (the language was stiff and not sequential), count especially in word problems, and read. Another sign was also indicated by low self-confidence.

Dyslexia was a disorder caused by neuro-biological abnormalities and was characterized by difficulties in recognizing words correctly/accurately in spelling and in encoding symbols. Some experts define dyslexia as a different condition of input/information processing (from normal children) which was often characterized by difficulties in reading, which could affect areas of cognition such as memory, input processing speed, time management ability, and coordination and movement control aspects. Visual and phonological difficulties could occur, and there were usually differences in abilities in various aspects of development.

In this article, the examples of assessment in each aspect of reading skills are explained. By studying them, teachers are expected to develop their own assessment guides according to their respective needs to assess phonemic awareness, alphabet awareness principles, accuracy, and fluency, and reading comprehension (Graziano, 2004).

Difficulties in writing (dysgraphia) include handwriting practices or beginning writing, spelling, and expressive writing. Markam (2009) states that there are various factors influencing the handwriting abilities, i.e., motor control, behavior, perception, memory, ability, cross models, use of the dominant hand, and abilities to comprehend instructions. Learning difficulties in writing (dysgraphia) are assessed using formal and informal assessment instruments. Markam (2009) states the assessment process of disgraphia can be done through handwriting, spelling, and expressive writing activities.

There are several characteristics of children with learning difficulties in mathematics such as (1) impaired visual motor coordination, (2) spatial relation disorders, (3) visual perceptual abnormalities, (4) perseveration, (5) difficulties in recognizing and understanding symbols, (6) body image issues, and (7) difficulties in language and reading (Graziano, 2004). There are some common mistakes made by children with specific learning difficulties in mathematics, dealing with understanding symbols, place values, calculations, erroneous processes, and illegible handwritings.

Graziano (2004) argues that there are several principles of teaching models and remedial mathematics: (1) children should be prepared to learn mathematics; (2) learning starts from the concrete to the abstract; (3) enough opportunities to practice and repeat should be provided; (4) generalization is done to new situations; (5) it is based on the students' strengths and weaknesses; (6) strong foundation of mathematical concepts and skills should be built; (7) balanced math programs are provided; and (8) the use of calculators is promoted to support mathematical reasoning.

There are four most influential approaches in teaching mathematics, namely: developmental learning sequences, complete learning (mastery learning), learning strategies, and problem solving. The developmental learning sequence approach emphasizes the measurement of student learning readiness and provides basic experience and prerequisite math skills. Teaching mathematics must start from the concrete to semi concrete and finally to abstract. The complete learning approach emphasizes the teaching of mathematics through direct instruction and structured learning. The steps are as follows: determining specific learning goals or objectives that can be measured and observed, for example: students can write answers to 20 questions of 1 to 10 addition in 10 minutes with 90% correctness;

describing the steps needed to reach the objectives; determining the steps that have been mastered by students and sorting the steps to reach the objectives. The learning strategy approach focuses on how to learn mathematics. The problem-solving approach emphasizes teaching to think about how to solve problems and to process information.

Table 1. Types of difficulties and their diagnosis (Intriago et al, 2021)

Types of Difficulties	Diagnosis
Dyscalculia	Confusion in numbers and signs, does not perform mental calculations or abstractions.
Dyslexia and Dysgraphia	Problems in reading and writing.

Since the prevalence of learning difficulties tend to increase, many researchers conduct studies related to assessment and intervention. The results of research conducted by Fletcher et al. (2002) claim that assessments conducted on students with learning difficulties should use an approach involving three components: exclusion, discrepancy, and heterogeneity. This approach emphasizes assessment efforts leading to the development of intervention plans. It is also stated that in the assessment carried out, there is no requirement to pass an IQ test, because the results do not contribute to the intervention planning and needs support services (Al-Zoubi et al, 2020).

Sternberg (2004) mentions that there are several reasons why IQ scores do not provide sufficient meanings to identify students' learning difficulties. This finding is in line with the results of previous studies conducted by Truscott (2006), that the classification of learning difficulties relying on IQ test results will be influenced by the Flynn effect. Therefore, the assessment of learning difficulties based on IQ scores is less significant. Also, the IQ test results cannot be used as a tool detecting learning difficulties. In this study, the researchers do not use the IQ test as an instrument to identify children with specific learning difficulties.

Lerner (2007) develops a tool for diagnosing specific learning difficulties because of his research, the Learning Disability Evaluation Scale (LDES). This tool uses observation techniques to diagnose the learning difficulties, consisting of 88 items whose scales are based on the definition of learning difficulties from IDEA (Individuals with Disabilities Education Act). Kauffman (2008) through his research has tested a series of tasks that can reveal the learning difficulties. Based on these tasks, he organizes a tool called Test of Written Expression (TOWE). This tool is mainly intended to reveal disabilities in writing.

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Hallahan et al. (2008) state that learning difficulty interventions should use the principle of Individual Education Programs. This is done to ensure that each child with specific learning difficulties has an individualized program to bring together their special needs.

In implementing the principles of the Individual Education Program, the Directorate of Special School Education (2007) explains that inclusive education means that schools must accommodate all children regardless of their physical, intellectual, social, emotional, linguistic, or other conditions, including children with disabilities, special intelligence, and special talents (gifted and talented children). Education should also accommodate the child laborers, street children, children in remote areas, children from ethnic and language minority groups, and disadvantaged as well as marginalized children from community groups.

The basis of inclusive education is on the legal basis, which refers to the spiritual foundation. A Nisa verse 9 states that “And let those [executors and guardians] fear [injustice] as if they [themselves] had left weak offspring behind and feared for them. So let them fear Allah and speak words of appropriate justice”. Supporting this, Az Zuhruf verse 32 reveals “Allah has apportioned among them their livelihood in the life of this world and has raised some of them above others in degrees [of rank] that they may make use of one another for service”. It also refers to juridical law, which includes: (a)

Law No. 20 Year 2003 on the Protection of the Child Rights, (b) Government Regulation No. 19 Year 2004 on National Education Standards, and (c) Bandung Declaration on Towards 2004 Inclusive Education in 2004. Law No. 20 Year 2003 on the National Education System, Article 5, Paragraph 1 states that every citizen has the same right to education.

Article 15 states that special education is the implementation of education for students with disabilities or students who have extraordinary intelligence held in an inclusive manner or in the form of special schools at the level of elementary and secondary education. Article 45 Paragraph 1 states that every formal and non-formal education unit provides facilities and infrastructure that meet educational needs in accordance with the growth and development of physical, intellectual, social, emotional, and psychological intelligence of students. Then, Minister Regulation on National Education No. 70 Year 2009 concerns inclusive education for students who have disabilities and potential intelligence and/or special talents.

As a form of government commitment in implementing inclusive education for children with special needs, in 2002 the government officially began pilot projects in nine provinces which have a source center and since then more than 1.500 students with disabilities had attended regular schools. In 2005, the number of the students increased to 6 or 5.11% of the total number of children with special needs. In 2007 it increased to 7.5% or 15.181 students spread across the 796 inclusive schools consisting of 17 kindergartens, 648 elementary schools, 75 junior high schools, and 56 senior high schools (Sukarsa, 2007).

To encourage the implementation of inclusive education more broadly, in 2004 a national workshop was held in Bandung as one of the efforts. It produced Bandung Declaration, whose contents suggest the government, educational institutions, businesses and industries, and the community guarantee every child with disabilities and other special needs including specific learning difficulties to get the same access in all aspects of life, and to get humane treatment.

Issues and problems are often faced in inclusive education. Even though the development of inclusive education in Indonesia is quite encouraging and has received appreciation and enthusiasm from various communities, especially practitioners of education, so far in the level of its implementation it still faces various issues and problems. Based on the results of the Munawar's study (2005) of 12 inclusive schools in Surakarta Districts and Cities, in general there are currently five groups of issues in inclusive education at the school level that need to be observed and anticipated, so that the implementation is unbiased, or even frustrates the inclusive education itself. The issues cover understanding, implementation, school policy, learning process, and teacher capability.

Methods

This research was conducted in Sleman Regency, Special Region of Yogyakarta. The research subjects were inclusive elementary school students consisting of male and female students scattered throughout Sleman Regency. Samples were taken in 25 inclusive elementary schools in Sleman Regency. Methods of collecting data were observation, tests, interviews, and surveys. This research was conducted for one year and data collection was carried out in stages in 25 inclusive elementary schools throughout the Sleman Regency of Yogyakarta.

This research is an explanatory descriptive study, which seeks to obtain a detailed and comprehensive description in identifying and assessing learning difficulties models specifically for students in inclusive primary schools. The research subjects were students from 25 inclusive, public, and private elementary schools in Sleman Regency, Yogyakarta (465 students). The population is all students from grade one to six in all-inclusive elementary schools in Sleman Regency. The sample was determined using a stratified random sampling technique, consisting of a portion of students from third to sixth grade who got obstacles in learning and had low achievements. The consideration is based on the understanding that the academic learning difficulties category is usually not detected until the child is in second grade (Graziano, 2004). The technique used to collect data is observation, interviews, documentation, formal and informal tests. Data is also collected through an assessment of certain learning difficulties. They are presented in the form of tables, pictures, and descriptions.

This study uses descriptive qualitative data analysis because the data analyzed comes from the results of interviews, observation, and documentation. This opinion is reinforced by Sugiyono (2009) who said, data analysis is a systematic process of finding and collecting data obtained from interviews,

observation, and documentation, by organizing data into categories, describing into units, synthesizing, arranging into patterns, choosing which ones are important and which ones must be learned, and make conclusions so that they are easily understood by themselves and others. Data analysis in qualitative research is carried out before entering the field, while in the field and after completion in the field. Then reinforced by Miles and Huberman in Sugiyono (2009) suggested that data analysis in qualitative research, carried out at the time of data collection took place, and after completing data collection in a certain period. During the interview, the researcher analyzed the answers of the people interviewed. If the answers interviewed after being analyzed are unsatisfactory, the researcher will proceed to the stage of certain data obtained which is considered credible. In addition, qualitative data analysis activities are carried out interactively and continue to completion.

Results and Discussion

Results

The results of the research in the field show that out of 465 third and fourth grade students from five inclusive elementary schools in Gamping Subdistrict, Sleman Regency (ie, elementary schools; Turusan II, Tegalyoso I, Gamping I, Muhammadiyah Dukuh, and Patran inclusive elementary schools), because as many as 85 students experience learning difficulties specifically in the category of dyslexia, dysgraphia, and or dyscalculia. In other words, of all third and fourth grade students from five primary schools, 29.65% had special learning difficulties. The percentage of students identified as having special learning difficulties varied for each school.

The results of the study show that of the 465 students, 85 students (18.27%) are identified as having specific learning difficulties in reading, writing, and math/numeracy. More male students experience specific learning difficulties than female students (55.3%: 44.7%). The specific types of learning difficulties are 26 children (22.10%) suffered from dyslexia, 23 children (19.55%) suffered from dysgraphia, and 36 children (30.60%) suffered from dyscalculia.

The subjects of the study show that the reading difficulties (dyslexia) identified are in the form of stuttering; omitting words or syllables; reversing order of words or syllables; adding extra words or syllable extra; doing self-correction; showing hesitation; reading in unusual ways; reversing order of letters; omitting letters; inserting words; adding extra letters; pointing each word to be read; reading with no expression; jumping over words, sentences, or lines; paying no attention to punctuation; chopping off syllables incorrectly; spelling incorrectly; producing a strange tone indicating tense; pronouncing words incorrectly; pronouncing words with teacher's help; repeating; and moving head when reading.

Writing difficulties (dysgraphia) identified in this study are illegible writing (no space between sentences and word/letter, letter formation, slant of handwriting, pencil pressure on paper, and how to hold a pencil), problems of spelling (missing letters, reflecting dialect, incorrect letter order in words, reversed order of double vowels, syllable reversals, extra letters), errors in chopping off syllables, and capitalization errors.

The mathematical or numerical difficulties (dyscalculia) identified are incomprehensibility of symbols [(+), (-), (x) and (:)], place values, calculations; erroneous processes; and illegible writing. They are caused (1) problems in spatial relations, (2) visual perceptual abnormalities, (3) motor visual associations, (4) perseveration, (5) difficulties in recognizing and understanding symbols, (6) body image issues, and (7) difficulties in language and reading. In addition, there are students who cannot understand place values (applying units, tens, hundreds, thousands, and so on) used in mathematical operations.

Discussion

Based on the results and assessment in reading, the students who experience specific learning difficulties make various errors such as omitting, inserting, replacing, reversing, mispronouncing, reversing order, inability to recognize words, and stuttering. Another apparent error is the misreading of words because of low visual discrimination. The students with specific learning will specifically read the word "mengelabui" with "mengebui". The incompetence happens not only in visual but also auditory discrimination. When dictated, students with specific learning difficulties will make mistakes in words,

for example some words will be inaccurately written (“menggergaji”- “meggeraji”, "kanvas"-"kampas", “mengejar”-“megejar”). Project IDEAL (2013), reading comprehension is the ability to understand written material. If a student with learning disabilities has difficulty reading written material, then comprehension will always be greatly affected and need extra support in the classroom (Nation, 2019). While problems with word analysis can affect reading comprehension, other factors that may contribute to problems with reading comprehension include the inability to successfully identify and organize information from the material.

In the classical teaching, teachers find it difficult to pay attention to the individual conditions of students. The results of the observations show that the teacher gives assignments to find out the main ideas of passages with the same level of difficulties on all students, regardless of individual conditions. If the students are unable to complete a task or to get good grades, the teacher considers them passive or slow. Reading is the most difficult skill area for most students with learning disabilities. Learning disabilities in reading encompass a vast array of reading issues including dyslexia. Some of the most common reading disabilities are word analysis, fluency, and reading comprehension, (Project IDEAL, 2013). According to Mathew (2003), the causes of errors in reading are: (1) deficiencies in visual and auditory memory, in optimal short- and long-term memory; (2) problems in remembering data; and (3) poor spelling.

The types of mispronunciation experienced by the research subjects are (1) incorrect pronunciation with different meanings, (2) incorrect pronunciation with the same meaning, and (3) incorrect pronunciation with meaningless words. This kind of situation occurs because the students do not recognize letters, so that they make a guess. Maybe it is because they read too fast, feel depressed or are afraid of the teacher, or because of differences in children's dialects with standardized Indonesian. For example, “tukang mereparasi mesin” is read “tukang mereparasi misin”.

In pronouncing words, the students identified as having dyslexia are assisted by the teacher because the teacher has been waiting for a while, but the students have not yet recited the expected words. Hallahan et al. (2005) state that the students who need this kind of assistance are usually caused by an inability to recognize letters or because they are afraid of the risks if something goes wrong. Such students also have less self-confidence especially when facing reading tasks. Educators should promote their cognitive development and correct their social development because of improving their health level (Chen, 2022).

The students’ difficulties in mathematics, according to Lerner (2007), are caused by several things, namely interference in spatial relations, visual perception, and motor visual associations; perseveration; difficulties in recognizing and understanding symbols, and in language and reading; and impairment of body image. The students have low understanding of symbols (+), (-), (x), and (:). In addition, there are students who cannot understand place values (applying units, tens, hundreds, thousands and so on) used in mathematical operations. Project IDEAL (2013), specific problems may include difficulty understanding size and spatial relationships and concepts related to direction, place value, decimals, fractions, and time and difficulty remembering math facts. Remembering and correctly applying the steps in mathematical problems (such as the steps involved in long division) and reading and solving word problems are significant problem areas.

The results of identification and assessment models to find out students with specific learning difficulties show that 84.38% of the students suffer from dysgraphia; 78.5% suffer from dyslexia; and 38.6% suffer from dyscalculia. After the identification of learning difficulties, an intervention is needed to handle it. The intervention a model designed is an Individual Education Program (IEP) that is integrated in student learning activities. Hallahan et al. (2005) state learning difficulty interventions should use the principle of IEP. This is done to ensure that each child with learning difficulties has an individualized program to bring together their unique needs. This means that this model is a method designed according to individual needs with specific characteristics of learning difficulties. The IEP method is integrated with learning activities, containing a series of strategies facilitated by the teacher. In this study the strategies of the IEP refer to the methods for handling specific learning difficulties proposed by Lerner (2007).

Various specific learning difficulties experienced by children in inclusive elementary schools and the model of identification and assessment are described as follows. The reading difficulty (dyslexia) is very varied, but all points are possibly caused by the interference of the brain function, but prevalence data on this condition are poor (Barbiero, 2019). There are four characteristic groups of learning

difficulties in reading, namely reading habits, mistakes in recognizing words, misunderstanding, and miscellaneous symptoms.

Assessment of the learning difficulties in reading can be done using formal and informal instruments. Teachers can use informal instruments as a basis in providing remedial teaching. Informal assessment can be used to identify various errors in oral reading and reading comprehension. School psychologists must conduct multi-method assessments to prevent, identify, monitor, and remediate child and adolescent learning difficulties and other presenting problems in the schools (Benson et al., 2019).

There are two models in teaching reading: teaching for regular children and for children with specific learning difficulties. The teaching model for regular children includes methods such as basic reading, phonetic, linguistic, SAS, alphabetical, language experience, and language interventions. The remedial teaching models include Fernald, Gillingham, and glass analysis methods (Hagen, 2017; Hulme, 2015; Snowling, 2019; Rodge, 2016).

Before conducting an assessment, a teacher must first understand the scope of reading skills as an assessment object. According to Graziano, (2004), there are five aspects of reading skills: phonemic awareness, alphabet principles, accuracy and fluency, mastery of vocabulary, and reading comprehension. In this paper, examples of the academic assessment are explained in every aspect of reading skills. Studying the examples, the teachers are expected to develop their own guides according to their respective needs including assessments of (1) phonemic awareness; (2) alphabet awareness principles; (3) accuracy and fluency; and (4) reading comprehension (Graziano, 2004).

Learning difficulties in writing (dysgraphia) include handwriting or beginner writing, spelling, and expressive writing. Markam (2009), Chung (2020), and Biotteau (2019) states there are various factors influencing the ability to practice handwriting, namely motor control, behavior, perception, memory, and cultural factors. It is also caused by the ability to carry out cross models, the use of dominant hands, and the ability to understand instructions. Difficulties in spelling can occur if a child has memory problems and perceptual disorders, especially memory, visual, and auditory perceptions. Furthermore, to write expressively, children should have the ability to use spoken language, to read, to spell, to practice handwriting, and to understand various rules applied in a type of writing. Assessment of learning difficulties in writing (dysgraphia) can be done using formal and informal assessment instruments (Dimauro, 2020; Drotar & Dobes, 2020). Markam (2009) states that dysgraphia is assessed through handwriting practices (beginner writing), spelling, and expressive writing.

There are several characteristics of children with learning difficulties in mathematics (dyscalculia). They are impaired visual-motor associations, spatial relationship disorder, visual perception abnormalities, perseveration, difficulties in recognizing and understanding symbols, body image impairments, and problems in language and reading.

Children generally do not find difficulties dealing with questions such as 4 + 3 = ..., 8 - 6 = ..., but they find problems in these forms such as 4 + ... = 7; 8 = ... + 5; or 8 - ..... = 3. This kind of difficulties occurs because children do not understand symbols such as (=), (+), (-), etc. To solve these problems, the children must first understand the symbols. Place Value, incomprehensibility of place values is shown by children. The illustration is presented as follows:

74
68
28
13
__ - ___ +
58
71

Calculation, there are children not familiar with the concept of multiplication, but they memorize the multiplication. The general error is illustrated as follows:

6
8
7
7
__ x __ X
46

54

The multiplication list might help correct a child's mistake if she/he has understood the basic concept of multiplication. Errors in the calculation process can be seen in the following example:

a. Exchanging symbols
6
15
2
3
__ X __ -
8 18

b. Units and tens are written regardless of the place value.
83 66
67 29
__ + ___ +
1410
815

c. All digits are added.
67
58
31
12
__ + __ +
17
16
A child counts 6 + 7 + 3 + 1 = 17
5 + 8 + 1 + 2 = 16

d. In adding up, tens are combined with units:
68 73
8 9
__ + ___ +
166
172

e. Large numbers are reduced by small numbers regardless of the place value:
627
761
486
489
___ - ___ -
261
328

f. Illegible handwriting. There are children who cannot read their own handwriting because the letters are inaccurate or out of the line. As a result, many of them make mistakes.

Children with difficulties encounter many barriers at school, which they are often unable to overcome (Cieśleńska, 2020). In the teaching-learning process in elementary schools, there are some students having learning difficulties. Learning activities for each individual cannot always take place naturally. Sometimes they run smoothly, but sometimes they do not. Also, the students may quickly understand what is learned, and they may find it very difficult. Furthermore, they can show high enthusiasm, but occasionally it is also difficult for them to concentrate. This is because every individual

is unique. This individual difference is what causes the various learning behaviors among them. Learning difficulties are circumstances where students cannot learn as they should (Ahmadi and Supriyono, 2004).

There are several principles of mathematics teaching models and remedial: (1) children should be prepared to learn mathematics; (2) learning starts from the concrete to the abstract; (3) enough opportunities to practice and repeat should be provided; (4) generalization is done to new situations; (5) it is based on the strengths and weaknesses of students; (6) strong foundation of mathematical concepts and skills should be built; (7) balanced math programs are provided; and (8) the use of calculators is allowed to support mathematical reasoning.

Conclusion

There were 465 students studied, 85 students (18.27%) were identified as having certain learning difficulties. More male students than women (55.3%: 44.7%). There were 26 children (22.10%) having difficulty learning to read, 23 children (19.55%) had learning difficulties in writing, and 36 children (30.60%) had difficulty learning in mathematics. Difficulties in reading (dyslexia) vary but all are likely caused by brain disorders. there are four characteristic groups of reading difficulties, reading habits, mistakes in recognizing words, misunderstandings, and other symptoms. Two models in teaching reading, namely ordinary children and for children with certain learning difficulties. In each aspect of reading and learning skills from the example, teachers are expected to develop their own assessment guidelines according to their individual needs. Difficulties in writing (dysgraphia) are demonstrated through the practice of handwriting, writing beginners, spelling, and expressive writing. There are various factors that influence handwriting abilities such as motor control, behavior, perception, memory, ability, cross model, dominant hand use, and the ability to understand instructions. Learning difficulties in writing (dysgraphia) are assessed using formal and informal assessment instruments. The process of assessing learning difficulties in writing (dysgraphia) can be done through handwriting, spelling, and expressive writing activities. Common mistakes made by children with special needs in mathematics, understanding symbols, place values, and calculations. Assess learning difficulties specifically in math / numeracy, namely children must be prepared to learn mathematics; learning from the concrete to the abstract; more opportunities to practice and repeat must be provided; generalizations made for new situations; based on student strengths and weaknesses; a strong foundation of mathematical concepts and skills must be built; balanced math programs are provided; and the use of calculators is permitted to support mathematical reasoning.

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