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Cognitive Development Analysis of Dyslexia Children in Madrasah Ibtidaiyah Al-Ma'rif Cirebon During the Covid 19 Pandemic

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Abstract: The success of the teaching and learning process for students with dyslexia can be achieved if the learning program is structured based on the potential and needs of students. Unfortunately, the learning process for dyslexic students in one of the MIs in Cirebon City has not been adjusted so that student achievement is not visible. The purpose of this study was to determine the cognitive development of dyslexic children during the Covid 19 pandemic. This research is a qualitative type with a case study method to analyze cognitive abilities in dyslexic children. The research subject was a grade 6 dyslexic student at MI Al-Ma'arif Cirebon. Data collection techniques using observation, interviews, documentation and reading tests. The results showed that students with dyslexia tend to have lower reading abilities than other students. This is due to their slow cognitive abilities resulting in difficulty spelling, distinguishing letters b, d, p and q, difficulty remembering and concentrating, learning programs that are not suitable for dyslexic children and the absence of special companion teachers for dyslexic students.

Keywords: cognitive development, Covid 19 pandemi, dyslexic children, reading.

Introduction

The first case of Corona Virus Disease 2019 (COVID-19) in Indonesia was announced by President Joko Widodo in early March 2020, this brought significant changes to the order of life in the country. The COVID-19 pandemic has paralyzed almost all sectors of life in the country, including education. Various innovations were developed, including the government. The government requested that teaching and learning activities in education units be carried out remotely to prevent and suppress the spread of COVID-19 in school clusters. This forces the learning process and school exams that should be conducted face-to-face (offline) to be overhauled using an online system. This applies to all levels of education, including general elementary schools and inclusive-based schools.

The Ministry of Education and Culture (Kemendikbud) continues to strive to make effective learning policies during the pandemic so that the achievement of competence for school-age children remains maximal and running (Kemdikbud, 2020). In Permendikbud No.22 of 2016, it is stated that the learning process in educational units is carried out in a fun, interactive, inspiring, challenging, and motivating way for students to participate actively. This confirms that the learning process is carried out in such a way as to promote character, talent, and processes so that the learning process can run well. The government launched the BDR or Learning from the Home learning process. BDR is implemented using the Distance Learning (PJJ) system. In-Law No. 20 of 2003 article 1 paragraph 15, it is explained that PJJ is education in which students are separated from educators and learning uses various learning resources through communication technology,

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information, and other media. In its implementation, PJJ is divided into two approaches, namely distance learning in the network (online) and distance learning outside the offline network (Asmuni, 2020).

Teachers and educators as important elements in the learning process are required to make a massive migration from traditional face-to-face education to online education or distance education. Online learning or learning through networks has the potential to support the learning process, including; meaningfulness of learning, ease of access, and improvement of learning outcomes. In the context of online learning, teachers and students can connect quickly and directly with text, images, sound, data, and two-way video. However, several obstacles occur, considering that students are still of elementary school age, so parental supervision is very necessary. Before the corona epidemic broke out, Indonesia already had rules around education that were regulated in such a way, so that all levels of society received an education, including children with special needs.

Law No. 20 article 4 paragraph 1 of 2003 concerning the National Education system that education is carried out democratically and fairly and is not discriminatory by upholding human rights, religious values, cultural values , and national pluralism. The Education for all Handicapped Children Act (1975) states that appropriate educational services must be provided for all children with special needs and also provide funds for the implementation of these educational services (Law No. 20, 2003). Indonesia is a large nation with the fourth population in the world with a variety of distinctive and unique cultures that have made it a plural country.

In the view of inclusion, it has been seen in the motto Bhineka Tunggal Ika which collects diversity in a single unit. Therefore, Indonesia through the regulation of the Minister of National Education of the Republic of Indonesia Number 70 (2009) concerning Inclusive Education for students with disabilities to obtain educational services according to their needs and human rights inclusively. Children with special needs are children who have significant physical, mental, intellectual, social, and emotional disorders in their growth process when compared to other children their age, so special educational services are needed (Juliansyah et al., 2018). Children with special needs can be interpreted as children who have disorders and are different from children in general.

Sidiarto (Madinatul Munawaroh and Novi Trisna Anggrayni, 2016) said that the causes of children experiencing delays in reading development were children who were born prematurely, children with physical disabilities, children who did not understand commands because the environment using several languages, and children who often moved schools. Every child has a developmental period which is certainly different for each child. Barriers during the developmental period can occur due to several things, one of which is caused by barriers to brain development during the perinatal period, prenatally, and during the first year of age (Haifa et al., 2020). Meanwhile, according to Widyorini and Julio Maria van Tiel, (Widyorini and Tiel, 2017) said that there are three causes of learning problems in students, namely: aspects from within (internal), aspects from outside (external), and aspects from within and outside the child. . There are two types of dyslexia including problems in listening to the sound of pronouncing letters and problems in pronouncing letters.

Researchers are interested in discussing cognitive development in children with special needs. There are several types of children with special needs but researchers limit them to children who have learning difficulties, especially those with dyslexia symptoms. The problem raised was cognitive development in dyslexic children during the COVID-19 pandemic. According to The International Dyslexia Association, (2013) Dyslexia is a learning disorder in children such as difficulty in spelling, reading, writing, and arithmetic. This disorder is not caused by hearing and vision disabilities, but rather due to disturbances in cognitive processes so that when the brain processes the information it receives it is slower than normal children.

Dyslexia is one of the disabilities (Raharjo, 2017). The term dyslexia comes from the Greek words which mean difficulty (dys) and (lexis)

which means word. Signs that include dyslexia are difficulty spelling, difficulty distinguishing the letters b, d, p, and q, difficulty remembering sequences, and difficulty concentrating. Meanwhile, according to Lidwina, Fahrin Chariz explained (Fahreza, 2019) Dyslexia is a loss of ability to read and write. This dyslexia is continuous into adulthood and old age (Azizurohma, 2017). But dyslexia is not a disease so there is no way to treat it, they are just people who happen to have a different way of learning from normal people as usual (Azizurohma, 2017). The inability of a child that appears to decrease as an adult occurs because the individual has succeeded in finding a strategy or solution to overcome the difficulties caused by dyslexia, which does not mean that his dyslexia has healed (Fahreza, 2019).

Amalia Rizki (Pautina, 2016) states that dyslexia is a heterogeneous disorder, and each expert has different opinions in conducting dyslexia studies. The cognitive approach was proposed by Piaget, who views language ability as one of the abilities that develop from the cognitive maturation process. Mulyadi (Pautina, 2016) also said that cognitive theory is divided into two theories, namely: (a) phonological deficit theory and (b) double deficit theory. In the development process that children experience, not all children experience a development process like normal children. It is not surprising that we find one in ten children who have learning disorders or commonly referred to as dyslexia, namely children who have difficulty learning to read and write (Asiah and Maghfiroh, 2019). Children with special needs have characteristics related to the level of functional development. This includes the level of cognitive development, motor sensor development, social interaction skills, language skills, and skills. Trubus Raharjo (Raharjo, 2017) states that reading literacy is associated with various complex cognitive abilities. Literacy ability in achievement is related to cognitive measurement and can also predict children's reading literacy development.

Looking at the results of research from other authors, they have the same problem but with different goals, namely, the researcher found that the results of research from several scientific papers entitled "A study of the analysis of cognitive abilities of dyslexic children in reading skills at Madrasah Ibtidaiyah Miftahul Ulum Distance Kulon Jogoroto Jombang" (Asiah and Maghfiroh, 2019). Based on the results of this study, this study discusses cognitive abilities in dyslexic children through reading skills during the COVID-19 pandemic. Swanson and SachsLee stated that disabled readers who have a disability feel inferior to skilled readers on various tasks of remembering, especially those that require the processing of semantic, phonological, and visual-spatial information. Many studies have concentrated on the relationship between reading ability and cognitive ability because they are interrelated (Raharjo, 2017).

Meanwhile, in the second research, namely "Cognitive Development of Early Childhood with Dyslexia: Case Studies in Educational Institutions in Indonesia" (Filasofa and Miswati, 2021). This study discusses cognitive development in children where this development depends on the process of learning activities, including in analyzing and thinking. In improving cognitive, a special strategy is needed to train it. Especially in children with dyslexia.

Based on the explanation above, the researcher conducted a study entitled "Analysis of Cognitive Development in Dyslexic Children at Madrasah Al-Ma'arif Cirebon During the Covid 19 Pandemic". This study aims to analyze, explain and describe cognitive development in public schools, in other words, this study examines children with dyslexia in schools that are not special for children with special needs or inclusion during the covid 19 pandemic. It is hoped that this research can add information about the analysis of cognitive development in dyslexic children remember that dyslexia is a form of reading and spelling disorder that is still rarely known by the public (public).

Methods

Madrasah Ibtidaiyah Al-Ma'arif is the object of case study research. The subject of this study was a 13-year-old boy with the initials DV. The research was conducted in April 2021, with 3 direct observations, interviews, and reading and writing

tests. The type of research used is descriptive qualitative research. According to Sukmadinata (Juliansyah et al., 2018), descriptive research is research that describes existing phenomena, which are natural or engineered. The type of research is using descriptive research, the type of descriptive research is research that only describes a situation or symptom (Asiah and Maghfiroh, 2019). A case study is a type of qualitative research that serves to investigate the process, obtain information, and obtain information. The case studied was the cognitive development of dyslexic children with the initials DV in the MI A-l Ma'arif Cirebon school environment during the covid 19 pandemic. The data was obtained from observations of children who have difficulty reading and spelling (dyslexia).

In this research, the researcher used to interview and observation methods. Interviews are a data collection technique in qualitative research methods (Juliansyah et al., 2018). Interviews were conducted by two parties, namely the interviewer and the object being interviewed with a specific purpose. In the interview, the researcher obtained information from class teachers and students with dyslexia at Madrasah Ibtidaiyah Al-Ma'arif Cirebon. This interview aims to obtain information about dyslexic children and to obtain developing cognitive aspects. next is observation, observation is done by looking at the activities of students who have dyslexia at Madrasah Ibtidaiyah Al-Ma'arif Cirebon while studying at school and outside school. Things that are observed in this observation process include: perception, memory, and language mastery. Which includes accuracy in spelling, remembering letters, including knowledge and syllables when reading.

Results and Discussion

Dyslexia is better known as a learning disorder or learning disorder (Widyorini and Tiel, 2017) which requires special guidance. However, Not all children have same dyslexia. dyslexia is a learning disorder in the form of reading difficulties, which also affect the ability to count (diskalula) and write (dysgraphia) (Juliansyah et al., 2018). Dyslexia also means learning difficulties in children who have a reading disability, not because of a disorder sight, hearing, or language skills, but caused by brain disorders when receiving or processing information (Rofiah, 2015). Meanwhile, according to Crombie (Kusumawardana R and Rosita, 2021), the term dyslexia refers to those who have literacy difficulties that result in them needing a set of accommodations to allow them to show their abilities.

Based on the observations made by the researchers on grade 6 students who suffer from dyslexia at MI Al-Ma'Arif Cirebon, some symptoms of the disorder appear on the research subject. These symptoms include writing the alphabet in reverse, omission of letters, difficulty making and composing sentences, the inability to read because they have not been able to recognize letters, and the inability to concentrate. These symptoms appear simultaneously with the environment of the research subject which is less support. Where should children attend inclusive schools? programs that are following the abilities and potential of children do not materialize because of the inaccessibility of the school. Elementary school nearby research subjects are unable to accept because there is no program or adequate facilities, until finally going to school at MI Al Ma'Arif Cirebon.

This is further supported by the rampant Covid-19 pandemic so that the learning process that was originally face-to-face (offline) is shifted to online (in the network). So that indirectly narrows the flow of learning research subjects. Face-to-face learning unlocks the potential of various advantages for teachers and participants students, including 1. Formal discipline applied to learning face to face can form mental discipline; 2. Make it easy to give reinforcement (reinforcement) immediately; 3. Simplify the process assessment by the teacher; 4. Become a vehicle for learning to interact with students (Queen et al., 2020). However, the research subject required to study from home, prepare before the exam by simple learning style, unaccompanied and also process independent learning.

Olivia booby in her book “Dyslexia” (Bobby, 2017) explains 3 types of dyslexia, namely; dyslexia

dyspnea or auditory dyslexia where sufferers have difficulty recognizing the phonetic sounds of letters or words, dyslexia This type has major problems in the union of letters and sounds. The second is dyslexia dyskinesia or called developmental dyslexia. where the sufferer tends to flip the letters in a sentence, has difficulty making and arranging words, and difficulty recognizing the letters P, B, Q, and D. The main problem with this type of dyslexia is memory and memory. motor movement. The third type is dyslexia dysidesia or dyslexia visually, where sufferers have problems capturing and storing sequential information, short-term memory, visual discrimination, and sequential view. The main problem with this type of dyslexia is difficulty reading words or sentences and deciphering the words as a whole.

From the explanation of the three types of dyslexia, it can be seen that children with dyslexia do experience various obstacles, although Every dyslexic child experiences various symptoms. This is in line with research conducted by Sulistyaning Putri Utami and Graduates Irawati (Utami & Irawati, 2017) that each child has the ability different in terms of recognizing letters and remembering them Even so they mostly still have the same characteristics as each other write letters in reverse, subtract letters when writing, add letters when writing and replace letters when they forget what letters to write.

When viewed from the three types, research subjects are included in the dyslexia dysidesia or visual dyslexia where the main problem is difficulty reading words or sentences and deciphering words whole and supported by short-term memory so that the subject research is difficult to focus or concentrate. Research subjects who are primary school-age boys increasingly support research conducted by Nurul hidayah that global cases of dyslexia sufferers ranged from 5% - 17% in school-age children. Where is the highest case experienced by boys with a ratio ranging from 2:1 to 5:1 (Rofiah, 2015).

Dyslexia of diseidesia triggers a delay in the development cognitive of a child. This is characterized by the main problem in the form of difficulty reading words or sentences and deciphering words whole. This type of dyslexic child needs a special companion who can break his habit of being a person who likes to learn, and can encourage the spirit of learning to continue working. Child dyslexia born in a less supportive environment triggers a gap with their peers. Nevertheless, the educators at MI Al-Ma Arif Cirebon have sought the process of learning according to their potential, in collaboration with parents in providing guidance, although so far there has been no progress significant.

The researcher also found that the research subjects did not apply the special learning or learning media that can support children's cognitive development to support children's achievement. It is proven from the habit of the subject who often stays silent at school and the habit of every day. Learning styles as well as support from the environment can provide opportunities for children to learn according to characteristics, as well as motivate children (Sundari and Handayani, 2020). In addition, the efforts made by teachers in the environment Schools can also provide changes for children with dyslexia (Fyanda et al., 2019). The presence of learning media such as picture media for children with dyslexia can improve cognitive abilities, as the results of research by Arif Widodo and colleagues, that the use of media serial pictures can improve reading and improve the learning spirit of dyslexic children (Widodo et al., 2020).

The presence of learning media during a pandemic can add to the taste want children to know about a lesson. Due to the process of learning that takes place at home online, is needed more guidance from parents in the teaching process. Learning online demands the role of educators to evaluate the effectiveness and adapt to learning needs. This is important to do to keep meeting the learning processes such as knowledge, morals, skills, intelligence, and aesthetics, that is, teachers and parents must work together in the learning process to realize the learning independence of participants' education during the COVID-19 pandemic. Given that the change to online learning indirectly affects absorption students, so it is important to note (Herliandry and Suban,2020).

The learning process for dyslexic children during the covid-19 pandemic by giving assignments can lead to creativity among students in developing the knowledge they already have. inline with this, their cognitive development will be trained with itself so that it also has an impact on improving children's achievement. With various learning methods from the teacher, and supported with the support of parents, they can create a product of creative learning that can develop thinking through analysis themselves, without leaving the subject matter that has been delivered by the teacher. It can start with simple things, considering that the child has dyslexia, so the teacher needs a method special. The role of the crew is very necessary in this case. Crews can become bridges from educators to students, so students can be noticed and given learning methods that are following their potential, interests, and talent.

In the case of dyslexic children, a pandemic can be a place for people parents to make it easier to monitor or supervise children's learning development directly. With this, parents can train children's cognitive development, such as learning together in reading, writing letters, spelling, and so on. It will lead to more intensive communication and will lead to a closer relationship between children and parents. Parents can provide direct guidance to children regarding learning material that has not been understood by the child. Where exactly parents are the first institution in children's education (Siahaan, 2020).

A study written by Ririn Aryani and Puji Yanti Fuziah states that the family environment plays an important role in the development of a child, including dyslexic children. Democratic parenting or authoritative with open communication between parents and children can be used as recommendations for parenting patterns for dyslexic children (Aryani and Fauziah, 2020). In line with this study, the authors found that the absence of parenting applied by the parents of the research subjects creates an indifferent attitude in children to learn to develop abilities, especially cognitive development. Communication patterns between parents and children can also cause misunderstandings in understanding children, especially those with dyslexia so that resulting in the inhibition of the talents and potential of children and leading to a low level of child achievement (Amin, 2018).

Conclusions

Based on the entire description above, it can be concluded that Each dyslexic child experiences various symptoms and levels of diverse cognitive development. Developmental delay Cognitive behavior in dyslexic children is caused by the symptoms that occur in children with dyslexia himself because the brain is less able to receive and process information and reinforced by an environment that does not support potential and his abilities, especially during the covid-19 pandemic. A dyslexic child with all its uniqueness requires a suitable learning environment with their abilities and potential to support development children's cognitive and support children's achievement.

In this study, researchers only focus on the cognitive development of children by paying attention to the child's problems or habits and surrounding environment. So it will be better for researchers the next one who will research similar things to be able to research children's dyslexia in other developments such as skill development social and so on.

Conflict of Interest: The authors declare that there are no conflicts of interest concerning the publication of this article.

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