

## **Learning Disorders in Neuroscience and Islamic Education Perspectives**

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**Abstract:** This study examines the learning problems of neuroscience perspectives and Islamic education. To find out what are the factors of learning disorders with a view of neuroscience and Islamic education itself. Neuroscience as a field of science that studies the nervous system in the brain, while Islamic education has great urgency for life. The research uses qualitative methods of literature study by analysing and understanding related to the phenomenon of learning disorders, views of neuroscience and Islamic education. Research with relevant literature sources, this research technique includes summarizing data, and making conclusions. The findings in this study that symptoms of learning disorders in students can be diagnosed from learning outcomes that are not in accordance with the efforts made, slow in completing tasks and then behaviours such as lying, opposing, and lack of confidence. Disorders in neuroscience perspective learning such as Learning Disability, Dyslexia, dyscalculia, ADHD. While in the perspective of Islamic education there are internal factors with intelligence, enthusiasm and patience. While external factors such as cost, guidance, teachers, and quantity of learning.

**Keywords:** Islamic Education, Learning Disorders, Neuroscience

### **A. Introduction**

Philosophically, the essence of education is the optimization of all human potential (intelligence) (Dewi et al., 2018; Hidayat, et al., 2023; Aras, A., & Nzobonimpa, C. 2023). The whole potential of man is cantered on his brain. The science that studies the brain is neuroscience (Wijaya, 2018b). Therefore, education needs to incorporate neuroscience into practical learning (Gkintoni et al., 2023). Neuroscience studies the consciousness and sensitivity of the brain in terms of biology, perception, memory, and its relation to learning (Susanti, 2021) For neuroscience theory, the nervous

system and brain are the physical basis for the human learning process (Hidayat, 2017). Neuroscience is a field of scientific research on the nervous system, especially the brain. Neuroscience is the study of the brain and mind.

Many studies have found that humans have not maximized the potential of their brains, both to solve problems and create new ideas (Huda, 2020). Many studies have found that humans have not maximized the potential of their brains, both to solve problems and create new ideas (Dadan, 2021; Fauzi, I., Rakhmat, C., & Budiman, N. (2023). It has been proven that in addition to having a great ability to store information, the brain also has an equally great ability to rearrange that information in new ways so as to create new ideas (Widiyati, 2021; Harya, T. D. 2023). The challenge faced is how to implement an education system that allows optimization of the entire brain so that the reception, management, storage, and use of information occurs in an integrated manner (Munadi et al., 2023; Mata, 2022; Ismail, 2022; Fitriyah, L. 2023). If referring to the definition of education listed in the National Education System (namely conscious and planned efforts to create a learning atmosphere and learning process so that students actively develop their potential, personality, intelligence, noble character, and skills needed by themselves, society, nation, and State) then there should be no more misunderstandings about the brain.

Therefore, the brain is the centre of the whole body. The human brain controls all body functions if the brain is healthy it will encourage body health and will support mental health, otherwise if the brain is impaired, then body and mental health can be disrupted (Zulaini, 2016). The brain regulates and coordinates most movements, behaviour, heart rate, body fluid balance and body temperature. (Mochamad et al., 2022). The human brain is responsible for the organization of the entire human body and thought, therefore there is a close link between the brain and human thought (Chandra, 2014). Knowledge of the brain influences the development of cognitive psychology (Hasan, 2017). The brain is also responsible for functions such as recognition, emotion, memory, motor learning and all other forms of learning (Lusiawati, 2019). The brain is a tool for processing data about the internal and external environment of the body received by receptors on the senses (such as eyes, ears, skin and others) (Timotius, n.d.). The data is sent by a nerve vein known as the whole nervous system.

Every human being who is normal in function will also perform well. For those who have abnormalities in brain function, they certainly experience interference, so that everything that happens in the brain cannot be fully realized if there are disorders contained in the brain. Brain disorders are problems that cause damage to performance in the brain (Yadika et al., 2019). The human brain is also used in learning, but if there is a disorder it can also affect a person's learning process (Aprilia & Aminatun, 2022; Irhamna, V., & Fithriani, R. 2023; Irhamna, V., &

Fithriani, R. 2023). Because learning requires thinking and thinking, of course, using the brain. Disorders that occur in the brain are closely related to the learning process; learning will not run smoothly if there are brain disorders related to learning. Therefore, in this article will be discussed more broadly about learning disorders, neuroscience perspectives and Islamic education.

## **B. Methods**

Based on the purpose of writing this article, the author uses this research method with a literature study conducted to analyse and understand more deeply the phenomenon of learning disorders (Zakariah et al., 2020), focusing on the views of neuroscience and Islamic education on this issue (Adlini et al., 2022). This literature study involves collecting data through searching and reviewing literature relevant to the research topic. The selection of literature sources will be carried out based on predetermined inclusion and exclusion criteria.

Furthermore, the authors of data analysis in this study followed the data analysis technique developed by Miles and Huberman (Wijaya 2018). This technique includes summarizing data, presenting relevant data, and making conclusions from the literature that has been reviewed (Witara et al., 2023). This method will help to identify patterns, trends, and views of Islamic neuroscience and education related to learning difficulties. With this method, a deeper understanding of how neuroscience and Islamic education views learning difficulties and the solutions offered. The results of this study are expected to provide useful practical guidance for educators, teachers, and practitioners of Islamic education in overcoming the problem of learning difficulties, as well as make an important contribution to the development of more effective and meaningful Islamic education.

## **C. Results and Discussion**

Learning disorders are conditions in which learners face obstacles in the learning process, which can affect their learning outcomes (Nuraeni & Syihabuddin, 2020). The factors that cause learning difficulties can come from a variety of sources and are not just limited to learners with low levels of intelligence. Symptoms of learning disorders can be recognized through low learning outcomes, the acquisition of results that are not proportional to the effort that has been made, slow completion of tasks, as well as various inappropriate behaviors, such as lying, defiance, or lack of confidence (Fitria & Fitriani, 2023a).

Learning difficulties can be classified into four types based on various criteria, including the type of difficulty, the field of study affected, the nature of the difficulty, and the causative factors. Fitria in 2023 also suggests forms of learning

disorders, such as learning disorders, learning disabilities, learning disfunctions, low achievement (underachiever), and slow learner (Fitria & Fitriani, 2023).

Learning disorders are not only experienced by students who have low intelligence abilities, even for those with high IQ abilities, sometimes there are also learning disorders, of course, with causative factors that may be different (Rakhmawati & Purwasih, 2018). Learning disorder is a translation of the English term learning disability which means learning disability (Umar, 2022). Therefore, more broadly in this journal will be discussed about learning disorders seen from the perspective of neuroscience and Islamic education (Fitria & Fitriani, 2023a).

So, learning disorders are conditions in which learners face obstacles in the learning process, what can affect their learning outcomes or in other words learning difficulties are obstacles that occur in the learning process that have a negative impact on students. Therefore, an effort is needed to find out and determine the factors that cause these obstacles and then improvements will be made, So that these difficulties can be overcome, so that students are not disadvantaged and can achieve learning goals as they should.

## **Learning Disorders Neuroscience Perspective**

### *Minimal Brain Dysfunction*

Minimal Brain Dysfunction or the so-called specific learning disability is a symptom in children that indicates specific learning difficulties, called specific because learning disability children only have learning difficulties in certain things, while in general learning disability children include having normal intelligence (intelligent) (Mandas & Sensanen, 2022). Learning disorders are not caused by vision, hearing, emotional or environmental disorders that are not favorable (Maryani et al., 2018). This learning disability child experiences a specific learning disorder caused by an abnormality in the function of the central requirement system (Kristiana & Widayanti, 2021). Specific learning disorders can take the form of combinations and impairments in understanding the formation of concepts, language, memory, attention, motor functions (Maryani et al., 2018).

The National Advisory Committee for the Handicapped of 1975 has defined "*Children with spesific disabilities*" which means children who have impairments in one or more basic psychological processes involved in the comprehension or use of language, spoken or written, disorders that can manifest themselves in an imperfect ability to listen, think, speak, read, write, spell, or perform mathematical calculations. (Bayu Pamungkas, 2017) Such disorders include conditions such as perception, disability, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (Supena & Dewi, 2021). The term does not include children

who experience learning problems that are primarily the result of visual, learning or motor disabilities, mental retardation, emotional disorders or environmental, cultural or economic losses.

### *Dylexia*

Dyslexia is the loss of the ability to read and write. The loss of ability to read is called Aleksia and the loss of ability to write is called Agraphia (Hasibuan, 2019). Dyslexia is a condition of learning disability in a person caused by interference in reading and writing activities (Syahroni et al., 2021). This disorder is not a form of physical incapacity, such as vision problems, but leads to the brain having processed and processed the information being read (Sundari & Handayani, 2020).

Dyslexic children will appear to speak late, not learn letters in kindergarten and not learn to read in elementary school (Safitri et al., 2022). Of course, the child will be more behind in terms of lessons while teachers and parents feel increasingly surprised why children with a good level of intelligence have difficulty reading (Hasibuan, 2019). Although the child has been taught specifically, the child reads more slowly (Muthmainah & Lisnawati, 2018). He has problems in reading and even confused to recognize similar letters and numbers. In addition, people with dyslexia will experience impaired self-confidence. Through the observation of reading difficulties experienced by children, there is a tendency that the trigger for dyslexia is a neurobiological disorder, which is characterized by difficulty in recognizing words correctly, both in spelling and coding symbols (Makhsun & Gumilang, 2022). The reading difficulties experienced by dyslexic children have nothing to do with their level of intelligence. Even in some cases, dyslexic children are much more intelligent than other normal children.

### *Dyscalculia*

Dyscalculia is the most common type of learning disorder found in elementary school children in addition to reading skills, even though reading and numeracy skills are important means to master other fields of study (Simanjuntank, 2021). Furthermore, this dyscalculia learning disorder can be caused by two factors, namely primary factors and secondary factors.

The primary factor itself is based on disorders in the student's brain (nerves) (Makhsun & Gumilang, 2022). Meanwhile, secondary disorders are based on external interference and learning patterns. (Alfin & Pangastuti, 2020). Several studies have been conducted by experts in an effort to uncover the influence of primary factors in Developmental Dyscalculia. Although until now there has been no research that conclusively believes that this primary factor is really the cause of this Developmental Dyscalculia (Mokodompit, 2020). The relationship with external

factors, one of which is the weak way of teaching teachers, for that as teachers and educators we must know how to provide the right services for them, one of which is with approaches or learning strategies that can generate learning motivation in dyscalculia children (Sembiring & Oktavianti, 2021). The low mathematical ability of students with dyscalculia disorders is also inseparable from various factors, from the weakness of teaching teachers, low socioeconomic status, to the problem of attention to student behavior that is less than optimal.

#### *ADHD (Attention Deficit Hyperactivity Disorder)*

*Attention Deficit Hyperactivity Disorder (ADHD)* is a *neurodevelopmental disorder* (a disorder that occurs during development resulting in emotional and behavioral disorders) that is chronic and persistent (Setiawati, 2020), which is most often found in clinical practice characterized by three main symptoms including attention deficit disorder, hyperactive, and impulsivity that is more severe when compared to.

This disorder occurs at least in two different situations, for example at school and at home (Prihatiningsih & Wijayanti, 2019). ADHD disorder can last throughout life from childhood, adolescence, and adulthood, and can increase the risk of failure to finish school, peer rejection, family conflict, substance abuse, defiant behavior, poor performance presentation, depression, and suicide risk as well as a wide variety of physical and mental health problems (Setiawati, 2020). ADHD that arises together with autism, learning disorders, and obsessive-compulsive disorder and game addiction as well as antisocial behavior adversely affect neurocognitive and psychosocial outcomes with poor long-term outcomes. The cause of ADHD is not known with certainty, but scientists also study the possible causes of ADHD disorders and risk factors, including: (Habsy et al., 2024).

- a) Brain injury
- b) Problems with neurotransmitters in the brain
- c) Premature birth of a baby
- d) Environmental exposure in the womb or early age

Dyslexia is the loss of the ability to read and write. The loss of ability to read is called Alexia and the loss of ability to write is called Agraphia. Dyslexia is a condition of learning disability in a person caused by difficulty in doing reading and writing activities. This disorder is not a form of physical incapacity, such as vision problems, but leads to the brain having processed and processed the information being read.

#### **Learning Disorders Islamic Education Perspectives**

Learning disorders in the Islamic view are influenced by internal and external factors that affect learners (Aprilia & Aminatun, 2022). Internal factors of learners involve physical aspects such as physical health and body condition, as well as

spiritual aspects such as level of intelligence, talent, interest, motivation, mental health, and learning style characteristics (Fitria & Fitriani, 2023b). On the other hand, external factors include environmental situations and conditions, such as family circumstances, living environment, and school conditions (Muthmainah & Lisnawati, 2018).

The Islamic approach to overcoming learning disorders includes several solutions exemplified in the Qur'an (Muthalib et al., 2023). One solution is to increase learner motivation, which is emphasized in QS. Al-Mujadalah: 11. In addition, the selection of the right learning method is also an important step, as affirmed in QS. An-Nahl: 125 (Fadjar, 2020). Services that focus on learners' differences are also appreciated in the Islamic view (Nurlaeli, 2020).

Al-Ghazali, a renowned Islamic thinker, also stressed the importance of the process of seeking knowledge during learning. The Qur'an states that man is born in a state of knowing nothing. An-Nahl: 78), and therefore, a process of seeking knowledge and guidance from more knowledgeable individuals, such as teachers or educators, is necessary. Several stories in the Qur'an, such as the story of Prophet Adam AS, Prophet Moses who studied with Prophet Khidir, and the story of Luqmanul Hakim, describe the learning process in an Islamic (Moch. Fatchur Rozi, 2022).

In the perspective of Islamic education, students are considered as individuals who need guidance and direction in order to develop their potential in accordance with fitrah (Utari et al., 2020). Learning disorders, as described earlier, can be overcome through the identification of causative factors and the provision of appropriate solutions (Nasution et al., 2023). The learning process in Islam is illustrated through various stories in the Qur'an and shows the importance of the role of teachers or educators in guiding learners (Q.S Al-Baqarah: 31, Q.S Al Kahf: 60-82, and others) (Oktaviari et al., 2023).

Therefore, there are basically many factors that contribute to learning disorders, both from internal and external factors that play an important role. Al-Zarnuji's concept of six learning factors, including 3 internal factors such as intelligence, passion, and patience, as well as 3 external factors such as cost, teacher guidance, and continuity of learning, certainly adds to the complexity of learning disorders in the Islamic view.

### *Internal Factors*

#### Intelligent

It is the first requirement in receiving knowledge, intelligence does not necessarily have to have a high IQ, because Islam does not recognize the concept of stupid as long as the individual is willing to try then he will acquire knowledge even though

the duration of time needed is different from other individuals (Kons et al., 2022), And it takes repetition to be able to master thoroughly (mastery learning), the role of educators in encouraging and motivating students by convincing that who he really gets. Quality people have intelligence, both intellectual, emotional, and spiritual intelligence. Various cognitive abilities such as mastery of science and technology reflect intellectual intelligence (Yusup et al., 2023).

#### Spirit

In seeking knowledge, it takes a spirit of never giving up and persevering. If the enthusiasm for learning is slack and low motivation means that students will have difficulty learning (Era Novita, 2020).

#### Patience

Seeking knowledge requires patience especially when dealing with learning difficulties, patience in resisting temptations that would distract from learning, fighting against laziness when it arises. Believing that behind difficulties there is ease (Q.S Al-Insyirah: 5).

#### *External factors*

##### Has a fee

Education costs money but that does not mean that if you do not have money you cannot learn (Sanderan, 2020), many examples have been proven by famous Muslim figures who managed to master knowledge with hard work such as Abu Hurairah the famous Hadith narrator he was also a poor man, Imam Shafi'i was an orphan with simplicity.

##### There are teacher instructions

This means that learning must have guidance from teachers, especially religious science (Elyas, 2018). The role of the teacher is very dominant in achieving learning objectives, teacher creativity in creating a pleasant learning atmosphere and choosing methods and media that match the teaching material is very helpful for students in understanding the knowledge taught.

##### Long Time/Continuity

Long time here means that learning is done throughout life according to the concept of long-life education (اطلبوا العلم من المهد الى اللحد), seek knowledge from swing to grave.

In order to overcome learners' learning disorders, it is important to recognize individual differences and provide appropriate educational services. Educators should develop pedagogical, professional, social, and personality abilities to create an inclusive learning environment and provide guidance appropriate to the characteristics of learners (QS. At-Tawbah: 122). The Qur'an also provides various learning methods that can be adopted, such as methods of wisdom, example, and parables, according to the learning context (QS. An-Nahl: 125, QS. Abraham: 24-26, etc.) (Shilphy, 2021).

In the context of Islamic education, educators are expected to provide guidance with heart, respect the differences of students, and provide services that encourage the development of students in accordance with their nature (SILDA, 2023). Educators are also expected to be good role models, in accordance with the teachings of the Qur'an (QS. Al-Ahzab: 21).

So, one example of learning disorders from the perspective of Islamic education according to Al-Zarnuji is the spirit (حرص) in seeking knowledge requires a spirit of never giving up and persevering. If the enthusiasm for learning is loose and low motivation means that students will experience learning disorders. In addition, it is also necessary to charge (بلغة) education requires costs but that does not mean if you do not have the cost you cannot learn, many examples have been proven by famous Muslim figures who managed to master knowledge with hard work such as Abu Hurairah the famous Hadith narrator he was also a poor man, Imam Shafi'i was an orphan with simplicity.

#### **D. Conclusion**

Learning disorders are conditions in which learners face obstacles in the learning process, which can affect their learning outcomes. The factors that cause learning difficulties can come from a variety of sources and are not just limited to learners with low levels of intelligence. Symptoms of learning disorders can be recognized through low learning outcomes, results that are not proportional to the effort that has been made, slow to complete tasks, and various inappropriate behaviors, such as lying, opposing, or lack of confidence. One example of a learning disorder from a neuroscience perspective is dyslexia which is the loss of the ability to read and write. The loss of ability to read is called Aleksia and the loss of ability to write is called Agraphia. Dyslexia is a condition of learning disability in a person caused by difficulty in doing reading and writing activities. This disorder is not a form of physical incapacity, such as vision problems, but leads to the brain having processed and processed the information being read.

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good level of intelligence have difficulty reading. Although the child has been taught specifically, the child reads more slowly. He has problems in reading and even confused to recognize similar letters and numbers.

While in the perspective of Islamic education, students are considered as individuals who need guidance and direction in order to develop their potential in accordance with fitrah. Learning disorders, as described earlier, can be overcome through the identification of causative factors and the provision of appropriate solutions. The learning process in Islam is illustrated through various stories in the Qur'an and shows the importance of the role of teachers or educators in guiding learners (Q.S Al-Baqarah: 31, Q.S Al Kahf: 60-82, and others). The Qur'an also provides guidance on how education should be directed, and educators should treat learners as subjects of learning, not just as objects. Learners should be given the opportunity to create and innovate, as Allah gave to the Prophet Adam (AS), who was taught the names of objects by Allah and given the ability to figure out for themselves (Q.S Al-Baqarah: 31)

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