

Mirror Neuron in the Perspective of Islamic Education

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Abstract : *This article serves to determine the effect of social intelligence in various ways. In particular, mirror neurons in the perspective of Islamic education. Mirror neurons are mirror brains. The point of the mirror brain is the brain's ability to imitate in several ways, either imitating what is felt or imitating what is seen. The working principle of the mirror brain is that it will work to imitate something optimally if it is done with habituation or done continuously. In addition, mirror neurons play a role in the healing process of the sick, for example stroke sufferers can recover with mirror neuron system therapy, because the brain in stroke sufferers will be trained how to adapt to potential exercises, so that patients can restore the flexibility of joints that cannot be moved. . In this study, it is used in the literature method, and mirror neurons are divided into several discussions, namely characteristics, and social intelligence*

Keywords: Social Brain, Mirror Neuron, Islamic education

Introduction

Mirror Neuron is a branch of neurology that is interesting to study from the perspective of Islamic education. Mirror neuron is a mirror brain which means a person's ability to imitate.¹ In this case, a person can imitate good and bad things depending on how someone filters the various events that occur around him. One part that plays a role in this imitation process is the brain.

¹ Mullen, G. *Mirror Neurons : Our Current Understanding*, Student Psychology Jornal, II.

The human brain is an important organ in human life that is very functional in regulating human behavior and the human way of thinking which is the center of the nervous system.² The human brain consists of about 72-78% water, 10-12 protein and 8-10% fat. The human brain works non-stop even though we are sleeping, even though the weight is only about 2% of body weight. The brain turns out to consume about 20% of the body's oxygen supply, 20% of the calories we need.³

According to Suyadi, the brain is divided into several parts: rational brain (IQ), emotional brain (EQ), spiritual brain (SQ). Of the three parts of the brain, the more dominant role is the mirror neuron, which is the emotional brain, because the emotional brain is very closely related to the relationship between character, feelings, and moral instincts. In the Islamic perspective neuroscience is almost the same as the 'ittiba process' which means imitating.⁴ In Islam, it should be imitated both in behavior and in saying that the Prophet Muhammad SAW. For example, Rasulullah SAW prayed on time, paid zakat, fasted and others.

Initially the mirror neuron studied only in imitation, but in its development it entered the realm of empathy. Other people are sick, we feel the pain. We watch horror movies, we are afraid, we watch tragedies with sadness. The early learning process of children usually begins by imitating, namely by imitating those around them or their environment. Imitating is the easiest way to learn, therefore the term role model is born, a person whose behavior can be imitated, his actions because of his moral goodness.

In addition, mirror neurons play a role in the healing process of the sick, for example stroke sufferers can recover with mirror neuron system therapy, because the brain in stroke sufferers will be trained how to adapt to potential exercises, so that patients can restore the flexibility of joints that cannot be moved. . In this study, it is used in the literature method, and mirror neurons are divided into several discussions, namely characteristics, and social intelligence.

² Daniel, *Sosial Intelligence Edisi Indonesia*. Jakarta: Gramedia .2007. hlm. 424.

³ Isiniatun, & Haryanto, *Neuroscience dalam Pembelajaran: Majalah Ilmiah Pembelajaran* .Nomor 1. Vol. 1 Mei 2005.

⁴ Suyadi, *Teori Pembelajaran Anak Usia Dini Pendahuluan*. Bandung: PT Remaja Rosdakarya. 2017. hlm.1

Discussion

Characteristics of Mirror Neurons in the Perspective of Islamic Education

Mirror neurons are social brains that arise from empathy. Mirror neurons rest on the relationship between feelings, dispositions and normal instincts. Dozens of research results prove that courtesy comes from the underlying emotional brain. Mirror neurons in Islamic education can be related to following. In this case, not just anyone is followed but as Muslims we should follow Rasulullah SAW. As it is said in the word of Allah, Q.S. Ali Imron verse (31), meaning. *"Say if you really love Allah, then follow me, surely Allah will love and forgive your sins. Allah is all-forgiving, most merciful"*.⁵

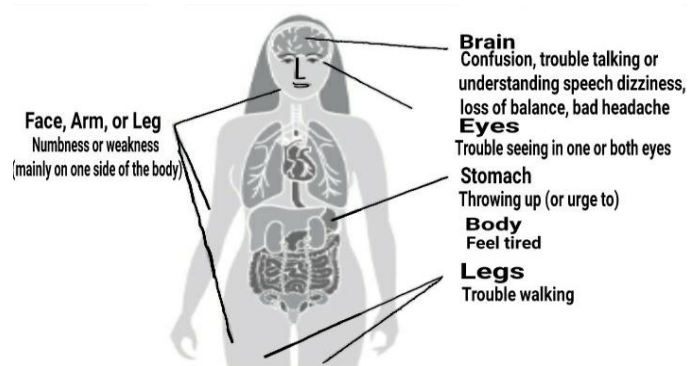
In the perspective of this imitation process starts in childhood. Since childhood, children will imitate their parents, in this case the important role of parents is to set a good example for their children. After the child grows up he will try to imitate what is happening in his environment.

For example, a child who has lived in an Islamic boarding school since childhood, the child will imitate some of the activities or behavior of the pesantren child. Nowadays mirror neurons are widely used in medicine, for example a patient who has suffered a stroke will have limited mobility. Of course this will make stroke sufferers need other people, both family and doctors and nurses to help with their activities.

Stroke is a disease that can cause sudden loss of neurological function due to disruption of blood supply to the brain.⁶ According to Desvigne-Nickens, the signs of stroke are signs such as sudden weakness in the facial muscles, arms and legs which are generally experienced by part of the right or left body, visual disturbances in one eye or both, difficulty walking, loss of strength and balance disorders, confusion, difficulty speaking or understanding conversations. Headaches without cause and others.

⁵ Depag, RI. *al-Qur'an dan Terjemah*. Bandung: PT Suka Bumi 2013. hlm. 54.

⁶ Adib, M. *Pengetahuan Praktis Ragam Penyakit Mematikan yang Paling Sering Menerang Kita*. Jogjakarta: Buku Biru . 2011.



Picture 1.1 Early Signs of Stroke

The result or effect of a stroke according to Designe-Nicknes, explains that a stroke can cause several disorders depending on the location of the stroke area that occurs in the brain. Stroke that occurs in the right hemisphere will generally result in problems or disturbances in measuring distance, causing the inability to try things like driving a vehicle, and short-term memory problems that cause patients to remember memories that are more than thirty years old, but forget and can't remember what was done this morning for example.

Meanwhile, strokes that occur in the left hemisphere generally result in speech and language problems that cause speech inability to understand other people's language, slow movement problems and careful behavior cause patients to need a lot of help every single activity, memory problems that make patients unable to remember incident one minute ago.

In Indonesia, our own stroke disease is generally more than 150 thousand cases per year. There are many ways to recover from this stroke, namely by exercising the mirror neuron system and training in constraint induced movement therapy. Each patient will be taught various functional abilities of the upper limb according to the concept of the operational guide and the patient is asked to do independent repetitions of the exercise according to the directions, this is quite amazing compared to the Constraint Induced Movement Therapy training.

Thousands of research results prove this, Weiss conducted a study on stroke patients aged 51-82 years, this was found to be a change in brain activity when replacing independent exercise.

Research conducted by Salama also explained that the assessment using samples and assessments using The Functional Magnetic Resonance Imaging proved that 60% of brain activity occurred in certain parts of the brain when they observed the movement execution of the movement itself.

Mirror neuron is a property in which it will be active during an execution and observation of a specific action. Although in the last ten years there has been only basic evidence for experiments carried out on monkeys, until now it has provided indirect evidence that humans have mirror neurons. A professor of human physiology, Rizzolati, explains that mirror neurons like us each time an action with a purpose. For example, taking a glass to drink. Even more amazingly, when we watch other people do the same action our mirror neurons will light up and flare up, we will have a copy of our actions, in this case it is possible to understand what the other person is doing implicitly.

Mirror neuron is a specific set of neurons that are activated at the time of observation and during motor activity, which is located in the inferior parietal lobule and the ventral premotor cortex. The activation of mirror neurons occurs when there is action, observation and object oriented hand actions, which is observing and then imitating the activities performed by the hands such as holding, tearing and manipulating objects. Mirror neurons are divided into two categories: strictly and broadly congruent. Strictly congruent mirror neurons comprise 1/3 of all mirror neurons, active when performing tasks. Broadly congruent mirror neurons are 2/3 mirror neurons and function when there is a logic-based hand movement when carrying a glass to drink to the mouth or to do tasks that have a purpose.

Mirror neurons can be interpreted as a picture of a person's mind that can be guessed from their behavior, it can also be interpreted as changing good to bad and bad to become good, for example a good environment can produce good citizens, friends with bad ones can turn someone bad too. . basically humans are created to live side by side, love each other and help each other. Human beings are not only required to control themselves so that humans are also called social beings, which means they need other people in the process of their survival. This results in the need for a social interaction and in human life.

The ability of humans to understand, adapt and interact with the surrounding environment, of course, this involves the role of the

brain through cooperation between the brain and nervous system, humans can receive, process, and respond to information from their environment. Neuroscience is the science that studies the nervous system, especially the neurons or nerve cells, in this case the brain.⁷ The development of various disciplines occurs to study the relationship between the role of the brain and human behavior. A combination of interdisciplinary cooperation such as cognitive science and neuro psychology. Cognitive science creates cognitive neuroscience that links the brain and other aspects of the nervous system, in particular between the brain and cognitive processing, as well as with behavior.

Humans spend a lot of time in their lives observing and trying to understand both the actions and feelings of others through social interactions. Based on the theory of mind, one of the social successes requires empathy. Empathy is a person's ability to what other people think and feel in certain situations. So the ability to empathize is needed to support the existence of individuals in their social interactions.

The process of empathy in humans has begun to attract attention due to the discovery of the mirror neuron system, which is also the basis for facilitating individuals to understand the actions, even emotions of others through the "simulation" mechanism. Empathy is an important factor to support a good / positive relationship between medical personnel and patients. Basically, every patient he wants medical personnel to treat him understand and understand the disease he is experiencing. The medical personnel's empathy for the patient as well as the patient's awareness of the care and attention that the medical staff gives, are expected to get better clinical results.

The relationship between medical personnel and patients is usually paternalistic, medical students who tend to be seen busy with all their duties and responsibilities both in practice as co-assistants or in the campus environment or in the community, often make the public or patients feel less cared for because it seems as if they are just busy. chasing the target to complete all the tasks at hand, this might happen because of a lack of empathy.

⁷ Taupik, Pasiak. *Tuhan dalam Otak Manusia, Mewujudkan Kesehatan Spiritual Berdasarkan Neurosains*. Bandung: Mizan. 2012. hlm.132

Social Intelligence.

Social intelligence is the ability to determine the requirements for leadership in a given situation and choose the appropriate response. The main components of social intelligence are social perceptiveness and behavioral flexibility. Perceptive nature is the ability to understand functional needs, problems and opportunities that are relevant to the group or organization and the characteristics of its members, social and collective relationships that will strengthen or limit efforts to influence groups within the organization.

According to Agustian, social intelligence is a form of ability to control oneself, to have resilience when faced with problems and to be able to solve problems, to be able to encourage oneself, to manage enthusiasm, and to be able to empathize to build bonds with others.⁸

Meanwhile, Garry Yulk defines social intelligence as interpersonal intelligence, which includes: knowledge of human behavior and group processes, the ability to understand feelings, attitudes, motivations from others and the ability to be clear and persuasive. Social intelligence is organized into two broad categories: social intelligence (what we feel about other people) and social facilities (what we do with that awareness).⁹

According to Garrly Yulk, the main components of social intelligence are social perceptive nature and behavioral flexibility. Buzan also said that people who have good social intelligence will be able to read other people's body language.¹⁰ Gardner said that the types of intelligence are: interpersonal, intrapersonal, linguistic, metaphorical, visual-spatial, musical, kinesthetic, and naturalist intelligence.¹¹

In more detail, Albercht describes social intelligence as the ability to live with other people and make them cooperate with us. Social intelligence is also sometimes referred to as "people skills". Explain that individuals have an awareness of the social conditions and the dynamics that govern them. In addition, individuals with

⁸ Agustian, A.G. *ESQ: Emosional Spritual Quotient*.(Jakarta: Arga wijaya persada, 2007. hlm. 43.

⁹ Safaria, T. *Interersonal intelligence : Metode Pengembangan Kecerdasan Anak*. Yogyakarta: Amara books .2005 .hlm 25.

¹⁰ Ridho, Aldy, *The Power Of Sosial & Emosional Inteligensi*, (Yogyakarta: Anak Hebat Indonesia, 2017. hlm. 9.

¹¹ Munif Catib, *Sekolahnya Manusia*. Bandung: Mizan Utama, 2011. hlm. 56.

social intelligence also have knowledge of appropriate interaction styles and have strategies to achieve their goals with the help of others.

Social intelligence in this study is the ability to determine leadership requirements in a particular situation and choose an appropriate response. The aspects of social intelligence are: (1) Persptivity, including: (a) Understanding social relationships and collective processes, (b) Conducting social relationships according to member characteristics, (c) Understanding member characteristics, (d) Problem solving skills. (2) Behavioral flexibility, including: (a) ability to vary behavior, (b) ability to self-evaluate.¹²

In the following, the author will present a case of social intelligence at SMP Negeri West Sumatra using qualitative methods. Three male students lead to the soccer court. Two of the students were very visible sportsmen following and laughing at the student who looked a little fat from behind him. "You're going to play soccer," said one student and sneered at the slightly fat student. The slightly fat student closed his eyes for a moment, then took a deep breath as if he was bracing himself for the fight before his eyes. In that instant he turned to the two students as he said, "Well, I'll try, but I'm really not good at soccer. After he was silent, he also added, but I'm good at art, show me anything I can definitely draw it well, pointing at his opponent, he said, you, and you are really good at football, really good, I like that someday, but it's impossible. Maybe I could be a little smarter at football if I kept trying. " After listening to the word from the slightly fat student, because the ridicule from the two students was not good. the two student friends said you didn't really bother. If you want I can show you how to play soccer tricks.

In addition, it is also found that in our environment it is common that students with good skills have good learning achievements as well. Also students who are good at adapting, these students have a good relationship. Conversely, students who are less social then these students have less good skills than students who are skilled in socializing.

Conclusion

From all the discussions that we use, it can be concluded that social characteristics and intelligence play an important role in human life. Mirror neurons in the Islamic perspective are a process of

¹² Safaria, T . *Kepemimpinan*. Yogyakarta: Graha Ilmu. 2004. hlm. 23.

imitating or imitating what is seen in the environment. The cell will be active while observing, doing, and speaking and as a Muslim ummah we should follow all the correct guidelines, namely the guidance of Raulullah SAW. In which the characteristics of the mirror neurons impinge on the relationship between feelings, dispositions and moral instincts, further shaping human civilization. The existence of disruption in this system results in the emergence of various kinds of neurological diseases, for example, autism and aphasia (speech disorders). And social intelligence is very important to be developed so that someone can be successful in determining a career, be it an independent business or working in other places. Social intelligence is very important to maintain relationships between superiors, subordinates, colleagues, and others. In this way, social characteristics and intelligence are related to one another.

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