

## Rational and Intuitive Brains in Islamic Education: Analysis of Al Ma'un Theology in the Neurosains Perspective

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**Abstract :** *The main problem of this research is the "saturation point" of the brain of the KH Dahlan students in learning QS Al-Ma'un. This research is interesting and original, because there is an interdisciplinary science between Islamic education and neuroscience, and no one has examined the rational and intuitive brain with Alma'u theology by KH. Ahmad Dahlan. The purpose of this study is to analyze the saturation point of Al-Ma'un learning in a neuroscience perspective. This analysis is important because the educational competence of Kemuhmamadiyah is not just rational cognitive, but also spiritual intuitive, namely taking humanitarian action or social transformation to mobilize society based on Islamic teachings according to the religious understanding of Muhamadiyah. This research approach is qualitative type of library research. Sources of data in this study are journals, e-books, as well as books on neuroscience and books on the history of KH Ahmad Dahlan's struggle by Junus Salam (2009). The data analysis technique was performed using content analysis. The results showed that in QS-Al-Ma'un learning, the rational brain of KH Dahlan students experienced a saturation point because it was only memorized, understood and repeated cognitively. This saturation point scientifically triggers the activation of the intuitive brain to actualize what is learned, understood and memorized into real deeds in the form of humanitarian action to defend the poor as the message of Al-Ma'un's theology itself*

**Keywords:** *Kemuhammadiyah, Al-Ma'un theology, neuroscience, rational brain, intuitive brain*

## **Introduction**

This research was motivated by the "saturation point" of the students of KH Ahmad Dahlan (hereinafter referred to as KH Dahlan), when studying the letter Al-Ma'un for about 4 months, which became known as "Al-Ma'un theology". This learning saturation point is interesting to analyze from the perspective of neuroscience, especially the intuitive brain, because departing from this saturation, humanitarian movements and actions were born to defend orphans to establish an orphanage.

KH Dahlan teaches Surah Al-Ma'un to his students continuously, until the students feel bored.<sup>1</sup> Students' boredom is caused by learning that was initially monotonous only focused on cognitive aspects, namely students only memorizing, understanding, analyzing, and practicing reading Surah Al-Ma'un in prayer. However, it turns out that it has not been able to solve the problem of poverty of the people as contained in the Surah Al-Ma'un. So KH Ahmad Dahlan ordered his students to take to the streets looking for poor and orphaned children to be brought home, bathed, given food, proper clothes and taught various knowledge. This is where the intuitive abilities of students who are trained continuously by K.H Ahmad Dahlan emerge.<sup>2</sup>

KH. Ahmad Dahlan had already smelled the students' boredom, so the students asked him why he always taught QS. Alma'un even though I understand. Then KH. Ahmad Dahlan asked his students have you practiced it? Then the student replied, "Yes, we have practiced and even made Alma'un as a reading for every prayer". Then Ahmad Dahlan said "you have memorized the letter Alma'un, but that's not what I meant. Practice it! Practiced means practiced, done! It seems that you have not done it, "said Ahmad Dahlan.<sup>3</sup>

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<sup>1</sup> Junus Salam, *KH. Ahmad Dahlan : Amal dan Perjuangan* (Jakarta: 2009), hlm. 9.

<sup>2</sup> *Ibid*,...hlm 9

<sup>3</sup> *Ibid*,...hlm. 10

In essence, education, besides the transfer of value and transfer of knowledge, also optimizes human potential through learning.<sup>4</sup> Learning closely with the process of thinking or in other words is the process of maximizing the use and use of the brain.<sup>5</sup> Therefore, learning must be designed with attention to the characteristics of students, each of which has various brain abilities

Sousa, a well-known scientist said that although educators are not experts in the field of the brain, educators are one of the professions that work every day to change or develop human potential through the brain.<sup>6</sup> Sylwester argues that educators develop the potential of the brain without knowing brain science. So that educators only emphasize understanding the material without paying attention to the characteristics of the human brain that vary from one another. Therefore, an educator needs to integrate Islamic education with brain or neuroscience in learning practices in the classroom. So far the learning of Islamic education seems still pedagogical doctrinal, not rational empirically.<sup>7</sup> This has implications in Islamic education which is limited to the development of statistical competencies, not dynamically developing competencies. As a result, Islamic education has not been able to develop the potential of students' brains to become superior humans (*ulul al bab*), while human excellence is determined by their minds and brains. However, if we look at history, KH. Ahmad Dahlan towards his students in understanding the interpretation of QS. Alma'un is a process in which the teacher not only develops a rational brain (textual understanding) in dialogue with the Koran but also intuitively (contextually) with the practice of going down the road to support orphans and the poor, so that from these changes a brilliant idea was born to build a house. sick, orphanages, and poor houses known by the acronym PKU (formerly PKO). Even

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<sup>4</sup> Suyadi, *Hybridization of Islamic Education and Neurosaince: Transdisciplinary Studies of 'Aql in the Qur'an and the Brain in Neuroscience*, Dinamika Ilmu, Volume 19 (1), 2019.

<sup>5</sup> Suyadi, S. *A Generalogycal Study Of Islamic Education Science at The Faculty of Ilmu Tarbiyah dan Keguruan UIN Sunan Kalijaga*. *Al-Jami'ah: Journal of Islamic Studies*, 56 (1) 2018, 29-58

<sup>6</sup> Suyadi, *Hybridization of Islamic Education and Neurosaince: Transdisciplinary Studies of 'Aql in the Qur'an and the Brain in Neuroscience*, Dinamika Ilmu, 19 (1), 2019.

<sup>7</sup> Suyadi, S. *A Generalogycal.....*, hlm. 29-58

though at that time it received resistance from exclusive Muslims.<sup>8</sup> But still have the spirit of Alma'un in order to empower the marginalized people who are alienated and alienated from functional Islam.<sup>9</sup>

Some studies say that the education system has not been able to optimize the entire human brain, both rational and intuitive in learning. In the perspective of neuroscience, there is a study called rational intelligence and intuitive intelligence.<sup>10</sup> Without the role of the intuitive brain, the rational brain will not be optimal. Rational intelligence is the ability to think with common sense. Intuitive intelligence is the ability to generate ideas, ideas, and respond automatically with a high degree of accuracy. Intuitive intelligence reflects the role of knowledge in supporting students to determine, act more effectively and spontaneously.<sup>11</sup>

KH. Ahmad Dahlan is a person who is able to generate and optimize both brains (rational and intuitive) in learning. Like when students are told to memorize and understand QS Alma'un, then students will memorize the verse and understand the contents of the verse slowly and continuously until it reaches a saturation point, then when students are told to jump in to see the fact that there are other people's suffering in the street, then the intuitive brain will respond, which in turn generates positive action. Positive actions that arise from within the student's soul are called the emotional side. In other words, intuition trained from experience makes students smart.<sup>12</sup>

An intelligent brain is a brain that is able to carry out its function as a thinker, not a brain that is only good at recording events, where a person is unable to produce wisdom from an event that enters through his senses. This is what causes us to recognize what is meant by intuitive intelligence and rational intelligence. As an initial description of intuitive intelligence is a story that is contained in the Qur'an which tells of the dialogue between Prophet Musa AS and Prophet Khidir AS when Prophet Musa felt he was the smartest person then he asked Allah SWT, so that Allah showed that there was someone who is smarter than Prophet Musa AS, namely Prophet

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<sup>8</sup> Kiai Syuja', *Islam Berkemajuan; Kisah Perjuangan K.H Ahmad Dahlan dan Muhammadiyah Masa Awal* (Jakarta: Al-Wasat, 2009), hlm 42.

<sup>9</sup> Kiai Syuja', *Islam Berkemajuan.....* hlm. 102-110.

<sup>10</sup> Adib Al-Husein, "Otak Rasional dan Otak Intuitif dalam Pendidikan Islam", *Jurnal Dirāsāt: Jurnal Manajemen dan Pendidikan Islam*, 4(2), 2018.

<sup>11</sup> *Ibid.*, hlm. 1

<sup>12</sup> *Ibid.*, hlm. 1

Khidir AS. Another example was also experienced by Archimedes who experienced impasse in thinking rationally, to measure the volume of the king's crown, so that because of his saturation, he resigned to drown his body in the bath, suddenly he came up with a spontaneous idea, to measure the spilled water when he drowned. his body into the bath, and in the end he found the answer to his deadlock, namely that it turned out that the water spilled because of the pressure of the object was the volume of the king's crown.

The Indonesian education system is Curriculum Oriented, not student-oriented, the assessment standard is used as a benchmark, namely that students can pass or not depending on the test results. As a result, both schools and parents emphasize their children to master certain subjects being tested. So that in Indonesia there are many tutoring institutions or private institutions both online and ordinary private institutions (non online). Such as MTK tutoring, Indonesian, English, Natural Science, not Islamic education.

Art in Islam is an expression of monotheism and propheticism.<sup>13</sup> But it is very rare for students to take private in the arts, for example music, dance, painting, and vocals. Even though the ability in the arts can hone the right brain of students. The results of the study stated that if students are accustomed to practicing the arts, it can improve the intelligence of the right brain, including the intuitive brain. Art is able to activate the brain, influence emotions, and can improve social skills, motivation, cultural awareness and aesthetic appreciation (Suyadi, 2018, 30-42). This has implications for the creativity and imagination of students.

The inability of the education system to optimize rational and intuitive brains in learning, especially Islamic religious lessons, is a familiar problem in education. It is proven that Islamic religious learning is still pedagogical doctrinal, not rational empirical.<sup>14</sup> This contrasts sharply with the thought of K.H Ahmad who views that Islamic education (Alquran) is not just a cognitive doctrine, but as a guide for social action. It is proven that K.H Ahmad Dahlan trains his students to understand QS. Alma'un not only theoretically but also practiced in real life. K.H Ahmad Dahlan told students to go to the

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<sup>13</sup> Suyadi, *The Synergy Of Art, Neuroscience, And Islam In Early Childhood Learning In Yogyakarta*, Jurnal Tarbiya 5(1) 2018, hlm. 31-4

<sup>14</sup> Suyadi, *Hybridization of Islamic Education and Neuroscience: Transdisciplinary Studies of 'Aql in the Qur'an and the Brain in Neuroscience*, Dinamika Ilmu, Volume 19 (2), 2019.

streets to find orphans and poor people to be given help and attention. Thus, the establishment of an orphanage and hospital known as PKO in 1920<sup>15</sup> is one proof of this social action.

In the perspective of neuroscience, the intuitive brain will work when the rational brain is unable to solve problems. The point where the rational brain is weakened, the intuitive brain will work. One of the ways to sharpen the intuitive brain is to get out of the comfort zone (Utari, 2019), meaning that in learning we need to make students recognize, understand and live a lesson not only by sitting in class, only thinking theoretically, but how the lesson what has been understood can be actualized and internalized in real self-awareness by plunging into the environment seeing the existing reality, so that it gets out of the comfort zone. It is the same as if in a lesson, the teacher tends to emphasize only the rational understanding of students, without involving the real reality, then the students are fixated on their rational brain only. So that it causes boredom in thinking. Boredom occurs because the rational brain is no longer able to solve problems just by memorizing and understanding the doctrinal text without real practice, seeing the realities that exist so that it fosters a sense of empathy and emotions of students so that it gives birth to critical and creative thoughts. Such as Kh Ahmad Dahlan's learning practice which teaches understanding of Surat Alma'un, to his students, which in the end is Syudja 'a KH student. Ahmad Dahlan was moved by his heart to establish PKU Muhammadiyah.

Surah Alma'un is a short letter that contains allusions for people who pray diligently, but are happy, scolding orphans, and do not want to provide assistance to the needy and poor. In the letter, Allah says that woe is the person who prays but is negligent from his prayer.<sup>16</sup> Namely people who are happy and are reluctant to provide help. Help is both effective and efficient.

Of course it is not without the aim of the author to determine the title "Rational and Intuitive Brain in Islamic Education: Analysis of Al-Ma'un's Theology in The Neuroscience Perspective". Implicit in the title is the author's motivation to analyze Al-Ma'un learning from a

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<sup>15</sup> KH. Ahmad Dahlan (1868-1923) , Abdul Mu'ti, *KH. Ahmad Dahlan (1868-1923)* (Jakarta: Museum Kebangkitan Nasional Dirjen Kebudayaan Kemendikbud, 2015), hlm. 42

<sup>16</sup> Al-Hikmah, *Al-Qur'an dan Terjemahannya* (Bandung: CV. Penerbit Diponegoro, 2008), hlm. 602

neuroscience perspective. How the brain can function optimally in KH learning practice. Ahmad Dahlan about QS. Al-Ma'un?

## Discussion

### Biography of KH Ahmad Dahlan

KH. Ahmad Dahlan (1868-1923) was a national hero and a charismatic and polemical scholar of his time. He was born in Yogyakarta on August 1, 1868<sup>17</sup> and died on February 22, 1923.<sup>18</sup> His real name is Muhammad Darwis, the fourth son of the kiai Abu Bakr,<sup>19</sup> his father was a cleric and respected preacher at the Gede Kauman Mosque (now), formerly known as the Grand Mosque. Sultanate of Yogyakarta. KH. Ahmad Dahlan was born to a mother named Nyai Abu Bakar, she was the daughter of Ibrahim, a leader of the Yogyakarta sultanate palace at that time.<sup>20</sup> As a child, he was fond of studying religion and Arabic. However, the situation in his village was very anti-colonial so that it did not require schooling in schools belonging to the invaders. Since childhood, Dahlan has indeed been full of religious values. Religious education is obtained selectively and tries to contemplate and even practice it.<sup>21</sup>

In 1888 he went to Mecca to carry out the pilgrimage and deepen his knowledge of religion.<sup>22</sup> After returning to his homeland, he helped his father in recitation and religious study with adults, so he was given the title Kyai Ahmad Dahlan.<sup>23</sup> He has lived in Mecca several times. On his second departure in 1903, in the holy land he studied with a number of teachers, including Syekh Ahmad Khatib al-Minangkabawi, Muti Mazhab Syafi'i at the Grand Mosque.

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<sup>17</sup> Salman Iskandar, *55 Tokoh Muslim Indonesia Paling Berpengaruh* (Cet. I; Solo: Tinta Medina, 2011), hlm. 101.

<sup>18</sup> Weinata Sairin, *Gerakan Pembaharuan Muhammadiyah* (Cet. 1; Jakarta: Pustaka Sinar Harapan, 2008), hlm.46

<sup>19</sup> "Ahmad Dahlan" *Dalam Ensiklopedia Islam, Dewan redaksi ensiklopedi Islam* (Cet. 1; Jakarta: Pustaka Sinar Harapan, 2008 ), hlm. 101.

<sup>20</sup> Salman Iskandar, *55 tokoh Muslim Indonesia paling berpengaruh* (Cet. I; Solo: Tinta Medina, 2011), hlm. 101.

<sup>21</sup> Darmawijaya, *Muhammadiyah di Makasar* (Cet. I; Makasar: Pustaka Refleksi, 2007), hlm. 1-2.

<sup>22</sup> "Ahmad Dahlan" *Dalam Ensiklopedia Islam, Dewan redaksi ensiklopedi Islam* (Cet. III; Jakarta: Ihtiar Baru Van Hove, 1994)

<sup>23</sup> Liha Weinata Sairin, *Gerakan Pembaharuan Muhammadiyah* (Cet. I; Jakarta: Pustaka Sinar Harapan, 2008), h.43

On the other hand, he also admired the thoughts of Ibn Taymiyyah, Jamaluddin Al-Afghani,<sup>24</sup> Muhammad Abduh<sup>25</sup> and Muhammad Rasyid Ridha.<sup>26</sup> After returning from Mecca, he married siti walidah, the son of the cleric Penghulu H. Fadhil, who is now known as Aisyiah's founder Njai Ahmad Dahlan. From his second marriage he has six children.<sup>27</sup>

Most of Ahmad Dahlan's education was obtained from his father, but as he grew up, he learned Fiqh from KH. Muhammad Saleh, Nahwu by KH. Muhsin, the science of Falaq by KH. R. Dahlan, Hadith knowledge by KH. Mahfud and Shaykh Hayyat, while the knowledge of Qira'at was obtained from his teachers named Shaykh Amin and Shaykh Bakri Satock, especially Ahmad Dahlan studied pharmaceutical science and animal poison from Sheikh Hasan.<sup>28</sup> He is also an Islamic reformer known as Man in Actions.

The founder of this Muhammadiyah is a family dynasty of the twelfth Maulana Malik Ibrahim, Maulana Malik Ibrahim is a famous person among Walisongo, a pioneer of Islamic broadcasting in Java. He went on the pilgrimage at the age of 15 and remained in Mecca for five years. During five years in Mecca, KH. Ahmad Dahlan began to interact with reformer ideas in Islam, such as Muhammad Abduh, AlAfghani, Rasyid Ridha and Ibn Taymiyyah. He also gained knowledge from Syeh Ahmad Khatib who is also a KH teacher. Hasyim Asyari.

He joined the Budi Utomo organization in 1909. He also founded the Muhammadiyah Organization on 18 November 1912 (8 Dzulhijah 1330). Muhammadiyah's role in helping to educate the nation began when this modern Islamic organization was founded. Even before that, KH. Ahmad Dahlan has initiated a movement to advance this nation. It is preceded by a movement to straighten the

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<sup>24</sup> Abdul Sani, *Lintasan Sejarah Pemikiran: Perkembangan Modern Dalam Islam* (Cet. I; Jakarta: PT Raja Grafindo Persada, 1998), h. 46-47.

<sup>25</sup> Jajat Burhanudin, *Ulama dan Kekuasaan*, (Cet.I; Jakarta: Mizan Publisher, 2012), h. 296.

<sup>26</sup> "Ahmad Dahlan" *Dalam Ensiklopedia Islam, Dewan redaksi ensiklopedi Islam* (Cet. III; Jakarta: Ichtiar Baru Van Hove, 1994)

<sup>27</sup> Salman Iskandar, *55 Tokoh Muslim Indonesia Paling Berpengaruh* (Cet. I; Solo: Tinta Medina, 2011), h. 101.

<sup>28</sup> Abdul Munir Mulkhan, *Pemikiran KH. Ahmad Dahlan dan Muhammadiyah Dalam Perspektif Perubahan Sosial* ((Cet. I; Jakarta: Bumi Aksara, 1990), h.10

Qibla direction.<sup>29</sup> KH. Ahmad Dahlan is actually getting people closer to knowledge (science) and he is always inviting people to practice using their minds.

Muhammadiyah is engaged in society and education. It is through this organization that he tries to advance education and build an Islamic society. She founded various Aisyiyah organizations<sup>30</sup> specifically for women and founded the HW organization. He founded the HW organization intending to educate young people who are the flower of hope for religion and the nation. KH. Ahmad Dahlan is a leading Islamic reformer whose thinking is very dynamic. Islam according to him is not old-fashioned but progressive. Not outdated, but always in line with the demands, circumstances and progress of the times. Even what was originally Islamic education was carried out textually, in a contextual direction. He was also very concerned about the oppressed, *mustadl'ain*,<sup>31</sup> or *si ma'un*, which in the language of the Marxists is more famously known as the proletariat.<sup>32</sup>

### Rational Brain and Teachings of QS Alma'un

The rational brain is related to human common sense.<sup>33</sup> The rational brain is centered in the cerebral cortex, which is gray with a large percentage of 80% of the volume of all brain. The large volume of the cortex makes humans think rationally and cultured. The more virtuous and cultured, human behavior will change the way of thinking to the rational center. Anatomically, in the cerebral cortex there are several parts of the lobe, including: the frontal lobe (on the forehead), the occipital lobe (at the back of the head), the temporal lobe (around the ear), and the parietal lobe (at the tip of the head).

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<sup>29</sup> Majalah Suara Muhammadiyah, 107 Tahun Mencerdaskan Kehidupan Bangsa (Siar Islam Berkemajuan) edisi 22, TH. Ke- 104, 2019

<sup>30</sup> Abdul Munir Mulkhan, *Pemikiran KH. Ahmad Dahlan dan Muhammadiyah dalam Perspektif Perubahan Sosial*. Lihat juga Abdul Munir Mulkhan, *Reposisi 'Aisyiyah dalam Problem Gerakan Pembaharu* (Yogyakarta: Suara 'Aisyiyah, Edisi Th ke 91, 5 Mei 2014), hlm 14-16.

<sup>31</sup> <sup>31</sup> Kiai Syuja', *Islam Berkemajuan; Kisah Perjuangan K.H Ahmad Dahlan dan Muhammadiyah Masa Awal* (Jakarta: Al-Wasat, 2009), hlm 42

<sup>32</sup> Abdul Mu'ti, *KH. Ahmad Dahlan (1986-1923)* (Jakarta: Museum Kebangkitan Nasional Dirjen Kebudayaan Kemendikbud, 2015), hlm. 43

<sup>33</sup> Adib Al-Husein, "Otak Rasioanl dan Otak Intuitif dalam Pendidikan Islam", *Jurnal Dirāsāt: Jurnal Manajemen dan Pendidikan Islam*, 4(2), 2018

The frontal lobe plays a role in thinking, planning, and conceptualizing activities. The temporal lobe also plays a role in sound and sound understanding, memory and language activities. Parietal lobe plays a role in thinking activities, especially regulating memory. In cooperation with the occipital lobe, the parietal lobe helps regulate the work of vision. These lobes are important in helping the cerebral cortex to carry out vital functions, especially for rational thinking and memory,<sup>34</sup> especially Pasiak said, that these lobes were located when Doctor Vilyamir Ramachandran, and his team from the University of California discovered the part of the brain that plays a role. to the spiritual and mysterious human resupine called the "God Spot" which is located in the temporal lobe.<sup>35</sup>

Basic Law of the Brain (Dryden, 2001) says, when the rational brain is exhausted and unable to complete work, the intuitive brain will continue to work. Brain and heart try to get close. The brain that is honed over and over again will become wiser and calmer.<sup>36</sup> This means that when students experience boredom in learning QS. Alma'un, actually it is the peak of creative and rational thinking.

Islamic education is currently still focused on the left brain in learning.<sup>37</sup> In fact, to be smart the brain must be given the opportunity to bring out its abilities in a balanced and proportionate manner, both through the rational and intuitive brain.

Learning QS. Al-Ma'un by KH. Ahmad Dahlan, who was originally purely cognitive, even only occupies a low level (C1 memory) in Bloom's taxonomy or Lower Order Thinking and maximum level C2 (understanding). This is characterized by the dominance of memorization in QS learning. Al-Ma'un. The learning style is difficult, not challenging, so that students easily get bored. Furthermore, KH. Ahmad Dahlan explored strategies so that students understand that QS. Al-Ma'un is not just to be understood and memorized, but is practiced in everyday life. So that learning does not only emphasize

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<sup>34</sup> Suyadi, *Teori Pembelajaran Anak Usia Dini Dalam Kajian Neurosains* (Bandung: PT. Remaja Rosdakarya, 2017), hlm117-118

<sup>35</sup> Taufik Pasiak, *Revolusi IQ/EQ/SQ Antara Neurosains dan Al-Qur'an*. Bandung: Mizan Pustaka. 2004

<sup>36</sup> Abdul Chalik, *Modul Mata Kuliah Neurosain, Universitas Esa Unggul* (2018), hlm. 56

<sup>37</sup> Syaifurrahman dan Suyadi, *Desain Pembelajaran Keagamaan Islam Berbasis Neurosains*. Al-Murabbi: Jurnal Studi Kependidikan dan Keislaman. 6 (1) (2019). hlm. 55

the aspects of understanding (cognitive) but also affective and psychomotor.

KH. Ahmad Dahlan told his students to go out on the streets looking for orphans, not without reason, so that what the students saw and did would go directly into the subconscious mind. So that the experience gives rise to students' creative ideas spontaneously. It is proven that Shuja 'is a student of KH. Ahmad Dahlan succeeded in establishing an orphanage for orphans and PKO to help with general suffering at that time, which is now known as PKU Muhammadiyah, which almost all cities in Indonesia exist. It all has an impact on social welfare. So that Allah's orders contained in QS Almaun are successfully internalized into students, and can be actualized in the form of real deeds or practices. It started with lessons QS Alma'un taught by KH. Ahmad Dahlan continuously, until the students were bored. And in the end the students realized that what was meant by the QS Almaun content. QS Alma'u is not just practiced in prayer and memorizing the verse, but is practiced in daily actions. So that the benefits can be felt by others.

In this letter Allah insinuates and to humans about the characteristics of people who deny religion and the day of revenge, namely people who rebuke orphans, do not feed poor children, and woe to those who pray but *riya* '(want to be praised by others) and do not help people in distress.

Students' rationality in solving learning problems built by K.H Ahmad Dahlan in the teachings of QS. Alma'un greatly influences the behavior of his students. Students' saturation in learning, because they cannot solve problems through the rational brain. This means that the rational brain is in a state of peak. Solving problems in learning (understanding the content of QS. Alma'un) in order to get amazing results, one of which is by maximizing the role of the rational and intuitive brain based on felling, intrinsic, and intervention. Felling is the emergence of an opinion that suddenly comes to mind that can be related to the problem at hand so that it can lead to spontaneous decisions. Intrinsic is an idea that appears suddenly from students' brains in problem solving and this intrinsic situation is still related to felling. Intervention is the result of thinking that is linked to previous experiences so that it will lead to a way to get a spontaneous answer.

This intervention also has something to do with felling.<sup>38</sup> It can be concluded that the workings of the rational and intuitive brain are related to one another. Starting from the saturation of the rational brain in understanding QS. Alma'un, down to the intuitive brain performance. A spontaneous idea from KH students. Ahmad Dahlan, namely Syudja 'to establish an orphanage and hospital (formerly PKO), started from his experience of looking for orphans and poor people on the streets and then brought home to be cared for and cared for and cared for and cared for and cared for and cared for and cared for by giving them food, clothes, and a place to live worthy. These all result from felling, intrinsic, and intervention-based brain performance.

KH. Ahmad Dahlan in his speech once said that actually teaching that is useful for human reason is much more needed by humans than food that fills their stomachs. Teaching for humans will increase the size of the mind faster than the increase in body by food, actually looking for world property is more difficult than seeking knowledge that is useful in improving attitudes and actions,<sup>39</sup> meaning how KH. Ahmad Dahlan is very concerned about the development of the human mind (brain) through learning.

### **Intuitive Brain and Teachings of QS. Alma'un**

In fact, the performance of the brain in addition to the right and left hemispheres, namely the midbrain or intuitive brain.<sup>40</sup> In the perspective of neuroscience, the intuitive brain will work when the rational brain is unable to solve problems. The point where the rational brain is weakened, the intuitive brain will work. This state of saturation point of rational brain, automatically in neuroscience studies encourages the functioning of intuitive brain circuits. In this condition, what is learned, understood, especially when students memorize it, will be actualized empirically. In the context of Al-Ma'un theology, the actualization of Al-Ma'un's teachings is a humanitarian

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<sup>38</sup> Sao, S. *Berfikir Intuitif dalam Pembelajaran Matematika*. (Prosiding Seminar Nasional, 2014)

<sup>39</sup> Kiai Ahmad Dahlan, *Kesatuan Hidup Manusia* (HB Majelis Taman Pustaka 1923), lihat Abdul Munir Mulkhan, *Pemikiran ....* (Jakarta; Bumi Aksara, 1990), hlm. 229.

<sup>40</sup> Rini Wati, *Kecerdasan Intuitif dan kecerdasan Reflektif*, *Edu-Math* 4 (2013): 28.

action to defend the dhuafa so that it becomes a social transformation that moves society based on Islamic teachings.

Learning that emphasizes the three hemispheres of the brain can bring out the potential of students who make students become superior humans. This seems to have been seen from the familiar history, namely the teachings of QS. Alma'un practiced by KH. Ahmad Dahlan to his students. The saturation of creativity appeared when KH. Ahmad Dahlan repeated the QS interpretation lesson. Alma'un without being forwarded by another letter. Buya syafi'i ma'arif said that the repetition was deliberately done, because he was testing the inner sensitivity of the students in understanding the Alquran whether it was just to be read or to continue to do it. In the end the students understood that the Alquran did not only contain a cognitive dimension, but also served as a guide for social action. This means that Islamic education is not just a pedagogical doctrine, but an empirical rational.

The hybridization of Islamic education and neuroscience is essential. It can affect the learning process from pedagogical doctrine to empirical rational. Actually, long before, KH. Ahmad Dahlan has launched a study that is not only pedagogical doctrine, but also rational empirical in his time.<sup>41</sup> This can be seen when learning QS. Alma'un students not only learn theory, but are asked to take to the streets to find orphans and poor people to take home and care for. He thought far ahead, and found solutions fundamentally. So that education not only makes students pious individually but also pious socially. This had implications for Islamic education which was able to solve the problems of the ummah, by taking real action to participate in the welfare of the nation and state at that time.

According to Herdy, there are two ways of human thinking in describing science, namely the analytical way in the form of inductive and deductive reasoning and the non-analytical way in the form of intuition. According to Kustos, intuitive thinking is a cognitive process through feeling and understanding.<sup>42</sup> Intuitive thinking is different from analytical thinking. Explaining the truth of a statement with its proof is analytical thinking, but the truth that emerges

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<sup>41</sup> Suyadi, *Hybridization of Islamic Education and Neuroscience: Transdisciplinary Studies of 'Aql in the Qur'an and the Brain in Neuroscience*, Dinamika Ilmu, 19 (5), 2019.

<sup>42</sup> Kustos, P. N. *Trens Concerning Four Misconception in Student's Intuitively-based Problematic Reasoning Sourced in the Heuristik of Representativeness*. 2010.

subjectively and is accepted directly (without proof) is intuitive thinking.

Fischbein divides intuition into two, affirmatory intuition and anticipatory intuition. Both types of intuition must be in harmony in solving problems in order to get maximum results.

According to Kustos, solving problems that are not analyzed is a characteristic of intuitive thinking. Intuition varies from person to person. It can be concluded that the intuitive thinking process starts from the external environment in the form of problem information that enters one's mind through the senses (experience of helping the poor on the streets). Furthermore, it is processed in the brain to make problem solving solutions. The solution goes to the effectors and then returns to the external environment in the form of spontaneous answers (creative ideas to establish an orphanage and PKO). Intuition produced by a person can be known through sight and hearing.

The relationship between the brain and human behavior is inseparable. This is evidenced by the PET instrument. From the results of the PET instrument, it is stated that there are six brain systems that are systematically integrated with the overall human behavior. The six brain systems consist of the prefrontal cortex, limbic system, cingulatus gyros, basal ganglia, temporal lobe, and cerebellum. The six brain systems are very important in cognitive, affective, and psychomotor settings, including IQ, EQ, and SQ.<sup>43</sup> The separation of body, mind and spirit will have implications for the development of the three (IQ, EQ, and SQ) which automatically causes disharmony in the cognitive domain. affective, and psychomotor in learning, in this case the teachings of QS. Alma'un.<sup>44</sup>

The scientific evidence above inspires that education, especially Islam, is not only concerned with theory alone, but also on the personality (character) of students and can also proportionally develop psychomotor. This is clearly seen in the practice of QS teachings. Alma'un by Ahmad Dahlan. Ahmad Dahlan tries to develop and balance the students' IQ, EQ and SQ. Not only fostering student potential in the cognitive and affective domains, but also psychomotor. The cognitive aspect built by Ahmad Dahlan is

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<sup>43</sup> Suyadi, "Model Pendidikan Karakter dalam Konteks Neurosains", *Proceeding Seminar Nasional*, (Yogyakarta: Prodi PGMI Fakultas Tarbiyah UIN Sunan Kalijaga, 2012), hlm. 8

<sup>44</sup> Adi W. Gunawan, *Genius Learning Strategy, Petunjuk Praktis Menerapkan Accelerated Learning*, (Jakarta: Gramedia, 2003), 258.

memorizing and understanding the interpretation of QS. Alma'un. The affective aspect that is built is that students get used to reading QS. Alma'un every day and read the surah while performing prayers. The psychomotor aspects of students are able to take to the streets to support orphans and the poor on the streets to take them home to be given a proper place and to be cared for (bathed, fed, given knowledge). The peak of student creativity, was where a student named Syudja came up with a spontaneous idea to establish an orphanage and PKU (Oemoem helper). In this process the intuitive optimally develops.

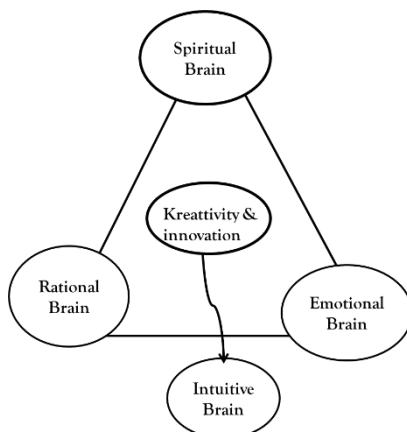
### **Rational and Intuitive Brain Optimization in Islamic Education**

A teacher in learning can know the extent to which students can activate their intuitive brain, so they must know what indicators that students are at the intuitive thinking stage. One of the indicators is that students experience boredom in thinking rationally. This was very visible when KH. Ahmad Dahlan instructed his students to continuously interpret the contents of the QS. Alma'un, where it is done every day until students feel bored.

The stage where the student is saturated indicates that the student has gone through a high rational thinking process, however, what is meant by the QS content. Alma'un actually not all can be grasped by rationality. It needs understanding by including emotions and presenting a heart or intuition. After the children are asked to look for street children and poor people, their emotions are immediately awakened, the students feel how sad they are to see the suffering and hardships of poor people who are neglected on the streets. When KH. Ahmad Dahlan told his students to bring home, and feed and take care of the needs of the poor, students actually learn how to love, support poor children which is actually what is meant by the content of QS. Alma'un, who ordered people to not only pray diligently, but also support orphans. From the activities carried out by the students by providing space and taking care of the poor, it gave rise to a spontaneous idea to establish PKO (Pengolong Kesengsaraan Oemoem). One of the creative ideas came from KH students. Ahmad Dahlan whose name is Sudja '. Syudja is a student of KH. Ahmad Dahlan who proposed to establish PKO or now known as PKU Muhammadiyah. PKO was founded during the Dutch colonial period. At that time many indigenous people were suffering, miserable and oppressed by the colonialists. PKU Muhammadiyah (now) is

developing and spreading from various cities in Indonesia. This has implications for improving the welfare of the people and the Indonesian nation.

Humans were created by God as perfect humans because they were endowed with the power of reason to think. That power, until the time limit of use, is still only in the form of potential. The name is material reason or potential reason (*al-aql al quwwah*).<sup>45</sup> The mention of potential material reason raises us in the position and function of the human brain. As long as the brain is not used, it is still only a material form with the great potential that lies in the connections of its nerve fibers.<sup>46</sup> Pasiak said that intelligence is generated from the spiritual brain, the rational brain, and the intuitive brain.<sup>47</sup> The following is a chart of the relationships between the spiritual, rational and intuitive brains:



The chart above is the human intuitive brain that meets the active mind, which is built by the rational, spiritual and emotional brain.

It can be concluded that KH. Ahmad Dahlan developed the potential of his students by means of multiple intelligences through both the spiritual, rational, emotional and intuitive brains, so that the students generated a sense of acquisition in the form of creativity and innovation, namely the creation of ideas to establish orphanages and PKU Muhammadiyah (now). , formerly known as PKO.

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<sup>45</sup> Bakar Osman, *Tauhid dan Sains*, terj. Yuliani Liputo (Jakarta: Pustaka Hidayah, 1991), hlm. 31

<sup>46</sup> Taufik Pasiak, *Revolusi IQ/EQ/SQ: Menyikapi Rahasia Kecerdasan Berdasarkan Al-Qur'an dan Neurosains Mutakhir* (Bandung: Mizan, 2006). hlm. 141

<sup>47</sup> *Ibid.*, 347

At a very simple neurological level<sup>48</sup> Danah Zohar describes SQ as the ability to reframe or re-contextualize our experiences.<sup>49</sup> And thus, SQ represents the ability to transform our understanding of it. The experience of our spiritual intelligence is not just a state of mind, but a way of knowing, a real way that will ultimately transform understanding in our real life.<sup>50</sup> Rationality also cannot be separated from emotion, in this case that the rational and intuitive brain has a relationship with spiritual and emotional intelligence. Therefore, the use of spiritual intelligence in integralistic and holistic thinking is very necessary to interpret life.<sup>51</sup>

According to Sousa, a well-known scientist said that although educators are not experts in the field of the brain, educators are one of the professions who work to change or develop human potential through the brain every day (Sousa, 2012). Educators develop the potential of the brain without knowing brain science or neuroscience. Therefore, an educator needs to integrate Islamic education with brain or neuroscience in learning practices in the classroom. So far, the learning of Islamic education seems to be still pedagogical doctrinal, not rational empirically. This has implications in Islamic education which is limited to the development of statistical competencies, not dynamically developing competencies.<sup>52</sup> As a result, Islamic education has not been able to develop the potential of students' brains to become superior humans (*ulul albab*), while human excellence is determined by their minds and brains.

In fact, if we want to look at the history of learning Surat Al-Maun from a figure known as Man in Action, namely KH. Ahmad Dahlan, he first implemented Islamic education which integrated the rational brain and the intuitive brain. Which Islamic education does not only teach the Koran textually, but contextually, and the content

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<sup>48</sup> *Ilmu Tentang Susunan dan Fungsi Sistem Saraf*. Lihat Tim Prima Pena Kamus Ilmiah Populer (Surabaya: Gita Media Press, 2006). hlm. 337

<sup>49</sup> Armahhedi Mahzar, *Merumuskan Paradigma Sains dan Teknologi Islam*. (Bandung: Mizan, 2004), hlm.55.

<sup>50</sup> Danar Zoharar dan Ian Marshall, *SQ: Memanfaatkan Kecerdasan Spiritual Dalam Berfikir Integralistik dan Holistik untuk Memaknai Kehidupan* terj. Rahmani Astuti (Bandung: Mizan) hlm. 58

<sup>51</sup> *Ibid.*, hlm. 58

<sup>52</sup> Suyadi, *Hybridization of Islamic Education and Neurosaince: Transdisciplinary Studies of 'Aql in the Qur'an and the Brain in Neuroscience*, *Dinamika Ilmu*, 19 (5), 2019.

in the Koran can be internalized into student personality and implemented in real life practices.

KH Ahmad Dahlan, a critical and open scholar, is also reflected in the practice of learning that he does to his students. The learning practices carried out by KH Ahmad Dahlan in combining the rational and intuitive brains were very visible when he taught Surat al-Ma'un to his students.

KH Ahmad Dahlan repeating the lesson of Surat al-Maun is not necessarily aimless, but he wants to sharpen the intuition of his students to be sensitive to the phenomenon of poverty that was almost rampant among Muslims at that time.

He repeatedly taught Surat al-Ma'un, until he memorized and understood its contents, so that students felt bored, and bored. So that one day KH. Ahmad Dahlan assigned his students to bring everything in the form of goods, clothes, food to bring and go around looking for the poor on the streets and bring them home, then bathed with soap, given clean clothes, given food and drink, and provided a bed. worthy. The repetition is intended so that students understand the message of the social verses in the Surah Alma'un. This means that the short letter must be seriously internalized to every Muslim person.

From this learning practice proves that when students are unable to think rationally, a teacher should direct students to think intuitively which gives birth to a spirit of compassion for others, so that from within a pure soul appears positive actions. From that positive action arises the activity of movement that is born from mental awareness. This is where intuition intelligence is honed, giving rise to imagination, innovation and creativity. The imagination, innovation and creativity gave birth to the ideas of the students to establish institutions that were useful for the poor.

Intuition arises from the human sense of sight. Yet the other senses intuit in their own way. This means that only direct perception can be characterized as intuition. For this direct perception contributes to the presentation of the individual's existence in sense appearances. In a general sense, imagination is called intuition while it is composed of intuitive elements, purely sensory, while at the same time being abstracted from the existence of the particular things that are presented.

From the above understanding, it can be understood that intuition is the ability to recognize, perceive knowledge spontaneously

as innate from instinctive vibrations without using a rational brain. Intuitive sense vibrations are soul vibrations found in the right brain. Intuition is the power or ability to know or understand something without thinking or learning it, namely in the form of impulses and impulses.

Intuitive thinking is direct perception of the outside world but without prior reasoning. Once a child is faced with something, he gets an idea or a picture and is immediately used. So intuition is imagination or immediate sensation without first thinking.

From the above understanding it can be concluded that intuitive thinking will be born when faced with real life realities that require various senses to be able to know, understand, feel, and imagine spontaneously from sensory experiences. So that new ideas or innovations emerge.

Ahmad Dahlan combines the rational brain and the intuitive brain of students by linking text and reality. Therefore, the most important thing in learning is not how students can understand the theory but how to be able to implement the theory in the practice of everyday life. So that learning is not only limited to understanding, it is more directed at the real level of practice so that it can generate creative and innovative ideas. This has implications for solving problems that exist in society in particular, and problems of the state and nation in general.

According to Pasiak, spiritual activities are unique to the human brain. As a dynamic and functional circuit.<sup>53</sup> Thus Islamic learning does not only develop IQ, but EQ and SQ. Not only in the cognitive, but affective and psychomotor domains, it does not just give birth to pious individuals or individuals, but individual keshalehan must have an effect on social life (social acquisition).

Daniel Goleman said that emotional intelligence does not mean giving freedom to feelings to rule but rather managing feelings in such a way that they are expressed appropriately and effectively.<sup>54</sup> Emotional intelligence is closely related to intuitive intelligence, where emotions are built from the intuitive brain to produce creativity and innovation appropriately and effectively. KH. Ahmad Dahlan apparently repeated

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<sup>53</sup> Lihat Pasiak, *Ringkasan Disertasi: Model Penjelasan Spiritualitas Dalam Konteks Neurosains* hlm. 24

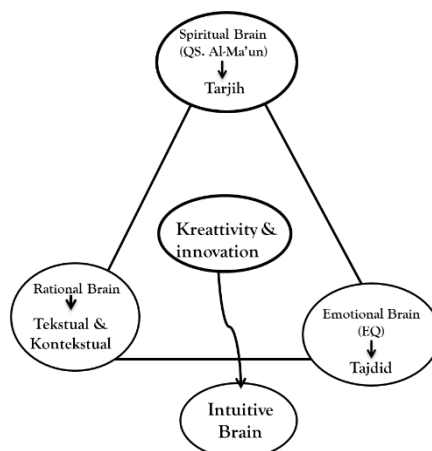
<sup>54</sup> Goleman, D., *Kecerdasan Emosional* (Jakarta: Gramedia Pustaka Utama, 2006).

his understanding of the letter al-Ma'un until his students got bored, not without reason, he wanted that his students could understand the Alquran text not only with his rational intelligence but he wanted his students to be able to understand the QS text. Alma'un through his intuitive intelligence, which in the end gave rise to creative ideas from one of his students, namely by establishing various orphanages, some also founded PKO which is now known as PKU Muhammadiyah. This is very rarely done by educators today. There may even be no learning practices that solve problems in the field that have an impact on reform (tajdid) in the social field. Even now, to solve the problems of students in the classroom, a teacher is still overwhelmed, especially until a teacher does a lesson whose positive impact can be enjoyed until now, such as the teaching of KH. Ahmad Dahlan about Alma'un.

Apart from being an Islamic reformer, KH. Ahmad Dahlan is an educator who highly appreciates and emphasizes intellectual education. He argued that reason (brain) is the source of knowledge. But often the mind (brain) doesn't get the attention it deserves, like a seed immersed in the earth. For this reason, educators must provide water and guidance in such a way that human reason can develop properly. This is important because according to him reason is an important instrument for understanding and deepening Islam. In order to develop intellectual education, he recommended that Mantiq science lessons be given in educational institutions at that time.

In teaching QS. Alma'un, KH. Ahmad Dahlan emphasized on the development of students' rational and intuitive brains, so that it has implications for education that is not only just textual and doctrinal teaching but also emphasizes the value of practice (practical and applicable). Amaliah here means practice that is not only individually but practice that has an influence on social welfare. Not only emphasizes individual kesholehan, but also social and institutional skills. Because of the teachings of QS. Alma'un which is practiced by KH. Ahmad Dahlan produced a very powerful change from his students, namely a change in the personality of the superior student, and was able to create the founders of business charities such as orphanages, PKO, which with the existence of various orphanages and PKO were indirectly able to help the government in the welfare of the nation. With the establishment of PKU, Schools, and Orphanages, this is proof that KH. Ahmad Dahlan is able to help the nation and state of Indonesia in the welfare of society.

KH Ahmad Dahlan in teaching QS. Al-Ma'un focuses on the development of the brain as a whole so it can be seen in the diagram below:



So actually KH. Ahmad Dahlan used memorization, because at that time the education system still used the sorogan (rote deposit) method, now that was only to attract people's attention. Once the students have gathered, KH. Ahmad Dahlan has another method, namely social analysis. That is the education that was initiated by Ahmad Dahlan. So Islamic education is not only attending school but also seeing the problems that exist in society.

KH Ahmad Dahlan wanted that Islamic education should be an agent of change that provides changes in life towards a better direction, namely realizing true Islam. In reality, Islamic education in schools tends to be static, not dynamic, there is no innovation, it tends to be pedagogical, doctrinal, not rational, empirical. Even though Islamic education should be in line with social problems that exist in society. So it is not clear that what is learned in school must match what is in society. So that Islamic education does not only touch the cognitive (rote) aspects, but also affective and psychomotor, can bring positive changes with real breastfeeding.

## Conclusion

Based on the research above, it can be concluded that the teachings of QS. Alma'un which are practiced by KH. Ahmad Dahlan are related to neuroscience (rational and intuitive brain). KH Ahmad Dahlan deliberately repeated the QS. Alma'un interpretation lesson until the students felt bored. Student boredom is due to the rational brain being tired and peaking. Student saturation is the beginning of

the emergence of student intuition. Because basically the intuition brain will emerge when it has passed the exhaustion of rationality and creativity saturation. The intuitive brain is the continuation of the rational brain through the creative brain. This creativity was trained by KH. Ahmad Dahlan by joining the field in finding orphans to be given help and assistance, in the form of shelter, food and clothing. Efforts to optimize the rational and intuitive brain in the teachings of QS. Alma'un are based on felling, intrinsics, and interventions, all of which play a role in generating creative and innovative ideas from Syudja, 'one of KH Ahmd Dahlan's students.

KH Ahmad Dahlan in the practice of the teachings of QS. Alma'un was able to boost and optimize proportionally, the rational and intuitive brains of students well. So that learning does not seem pedagogical doctrine, but empirical rational. It is truly proven that what his student named Syudja did in understanding the interpretation of the QS. Alma'un was not only theoretical or textual, but it was able to encourage students to take social action which was very beneficial for the people. Syudja was able to solve the problem of poverty in his time until now. His creative and innovative ideas were proven by the establishment of the Muhammadiyah and PKU orphanage institutions that were born from learning built by a charismatic and controversial reformer, KH. Ahmad Dahlan. PKU Muhammadiyah until now has more than 600 units spread throughout Indonesia. This proves that thinking as a whole by optimizing the process of thinking through a rational and intuitive brain proportionally, students are able to solve problems in understanding the contents of Alma'un's message..

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