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STUDENTS' BRAIN NEED ACCORDING QUR'AN AND NEUROSCIENCE

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Abstract

This paper examines the intersection of Qur'anic principles and neuroscience in meeting students' brain needs for learning. It argues that traditional auditory-focused learning methods, such as lectures and discussions, fail to engage the brain fully, addressing only a fraction of the cognitive potential. Instead, students require sensory-rich educational experiences, particularly visual and sensational (tactile) information, to enhance memory retention and cognitive processing. According to neuroscience, visual and sensational stimuli activate specific brain regions, including the hippocampus and occipital lobes, enabling long-term memory and deeper comprehension. The study further aligns these scientific insights with Qur'anic teachings, which emphasize three fundamental brain functions: auditory perception (*as-sama'*), visual proof (*al-abṣār*), and belief (*al-afidah*). These functions correspond to neuroscience findings, underscoring that multi-sensory learning approaches are essential for a holistic educational experience. This paper advocates for a transformative teaching model that includes visual aids and hands-on activities to cater to the brain's intrinsic need for sensory information. Through qualitative library research, the study explores Qur'anic verses and scientific data, proposing an integrative educational strategy that maximizes students' cognitive engagement and knowledge retention.

Keywords: *Brain-based learning, Qur'anic neuroscience, Sensory education*

Introduction

Lecturers realize it or not that the learning process with students both in class and outside of class, if they are just lecturing, does not actually involve the brain. Why? Because students receive information through lectures, questions and answers, discussions and presentations only contribute a maximum of 30 percent to the learning capacity (memory and thinking) in the brain (Dale, 1969). This means that the audio information obtained by students through lectures, questions and answers, discussions and presentations from teachers or lecturers is not very significant for the learning brain. So what do students' learning brains need so that they think and gain knowledge? The answer is that what students' learning brains need so that they think and gain knowledge is that they really need two important pieces of information, namely visual information and sensational information. Because of this, many experts highlight how teachers and lecturers teach that do not pay attention to the needs of students' and students' learning brains. Taufiq

Pasiak (Said, A. and Rahayu, D.R., 2017: x) said that learning without involving brain function is futile. Meanwhile, Taruna Ikrar stated that learning and teaching without knowledge about the brain is impossible (Musi and Nurjanah, 2021: 245). Even Hengki Wijaya (2018) said that ignoring the needs of the nervous system in a learning environment becomes dead. Thus, the practice of teaching lecturers by means of lectures or lecturers making dominant presentations and discussions in class must be stopped because it does not contribute to students' learning brains thinking and acquiring knowledge convincingly. As a solution, lecturers are required to change the way they teach and explain teaching material to students by providing very important information, namely visual information and sensations. How do you explain teaching material by providing visual information and sensational (sensory) information or how do you work to meet the learning needs of students' brains so that they get visual and sensational (sensory) information? To answer this question, let's use two answers from references to the Qur'an and neuroscience. The Qur'an answers this question in a general scientific theoretical manner (*mujmal*) while neuroscience explains in detail the operational mechanisms of how the five senses work with all the neural networks in the cerebrum, cerebellum and brain stem. Theoretically, the Qur'an explains in general how the human brain's learning process in order to understand is through three functions, namely the hearing function (*as-sama'*), followed by the proof function or *al-abṣār* and ending with the convince function or *al-afidah* (QS. an-Nahl/16: 78). Meanwhile, neuroscience or neuroscience explains in detail how the mechanism of the human brain works by learning through the five senses and then sending information to the neural network in the brain so that it can think and find the knowledge it is looking for so that the knowledge it obtains is true and convincing knowledge. For clarity on these two types of legal standing and the main scientific references, let us study and examine them seriously so that we do not fail to understand the needs of students' learning brains.

Method

The research approach used is qualitative research in the form of library research. There are two sources of data used in this research: (1) Al-Qur'an verses come from Surah an-Nahl verse 78, verses related to *tatafakarūn*, verses related to *ta'qilūn*, and verses related to *yu'qinūn*. (2) Neuroscience related to visual information originating from the eyes to the occipital lobe network and sensation information originating from the tongue, nose and skin sending to the parietal lobe network. . There are two types of techniques used to collect data, namely; (a) The Maudhu'iy method is a way of analyzing the themes of Al-Qur'an verses related to human learning needs (al-Farmawi, 1977); To obtain data on the human learning needs in the Qoran, researchers used the thematic method (*maudhu'i*) in the science of interpretation by tracing various verses related to the human learning needs, then these verses were analyzed according to the context of the verses. related to the human learning need. (b) Text analysis methods on neuroscience about human learning needs in the brain. To obtain data on human learning needs according to neuroscience, researchers obtained it from reading books and critical reviews of the neural anatomical network in the human brain, then analyzed it according to the context of students' brain learning needs.

Human Brain Learning Needs According to Qur'an

In general, there are four general pieces of information related to the human learning brain in the Qur'an, namely surah an-Nahl verse 78, verses related to *yatafakkarūn*, verses related to *ta'qilūn*, and verses related to *yu'qinūn*. **First**, Surah an-Nahl verse 78. The sound of this verse is as follows:

أَلَمْ نَخْلُقْكُمْ مِنْ مَّاءٍ مَلْحٍ نَحْنُ نُسْخِطُكُمْ ثُمَّ نُخْلِقُكُمْ مِنْ طِينٍ أَوْ عَلَقٍ فَتَذَكَّرُونَ

Meaning: "And Allah brought you out of your mother's womb in a state of not knowing anything, and He gave you hearing, proof and belief, so that you may be grateful"

According to the meaning of the verse above, Allah emphatically says that humans are present in the world without knowing anything, then Allah created three functions in the human brain to learn to acquire knowledge, namely the hearing function (*as-sama'*), the proving function (*al - abṣār*), and the function of belief (*al-afidah*). This means that Allah created the three functions of hearing, proof, and belief as a means of learning to gain knowledge. In general, commentators agree that the organ whose function is to hear (*as-sama'*) various audio or scientific information is the ear. However, mufassir have different opinions in interpreting the meaning of *al-abṣār*. In general, commentators interpret *al -abṣār* as vision, namely the organ of the eye that carries out the function of vision. However, one commentator, namely at-Thabāthabā'i (1991: 312 vol 14) said that the word *al-abṣār* does not only mean seeing through the eyes but can also be interpreted as involving the function of the tongue, nose and skin. The author agrees with Thabathabai that the word *al-abṣār* is appropriate to mean the function of proof and the organs that function to prove, namely the eyes, tongue, nose and skin. Likewise with the word *al-afidah*, in general the mufassir means the heart, but there is a mufassir named Fahrudin ar-Razi (1990: 76 vol 20) who said that the word *al-afidah* can be interpreted as convince. The author agrees with Fachrudin ar-Razi's opinion that the word *al-afidah* means convince, because the word *al-afidah* is the final process of the human organ to gain knowledge with confidence after being proven by the four senses, namely the eyes, tongue, nose and skin.

Second, the verse related to *yatafakkarūn*. Quantitatively, the word *yatafakkarūn* with all its derivations totals 16 verses. Almost all *yatafakkarun* words use *dhomir hum (jama')*, except for four verses using *dhomir antum* and one word using *dhomir huwa (mufrad)*, namely the word *fakkara*. Thus, the dominant word is *yatafakkarun* in 11 verses. Of the 11 verses, there are six verses where the words *yatafakkarūn* are always preceded by the word *qoum*, such as in surah Yunus verse 24, surah ar-Radu verse 3, surah An-Nahl Verses 11 and 69, surah ar-Rum verse 21, and surah az-Zumar verse 42. There are several verses related to the use of the word *yatafakkarūn* preceded by the word *qoum* (قَوْمٌ) as follows: (a) The surah of Yunus verse 24.

إِنَّمَا مَثَلُ الْحَيَاةِ الدُّنْيَا كَمَاءٍ أَنْزَلْنَاهُ مِنَ السَّمَاءِ فَاخْتَلَطَ بِهِ نَبَاتُ الْبَرِّ الَّذِي كَلَّ النَّاسُ وَالْأَنْعَامُ حَتَّى إِذَا أَخَذَتِ الرَّبُّ زُخْرُفَهَا وَازَّيَّنَتْ وَظَنَّ أَهْلُهَا أَنَّهُمْ لَادِرُونَ عَلَيْهِ إِلَّا أَمْرًا لَّوَّالَهُ أَوْ نَهَارًا فَجَعَلْنَاهَا حَصِيدًا كَأَنْ لَمْ تَغْن بِالْمَاءِ سِوَى كَذَلِكَ نُفَصِّلُ الْآيَاتِ لِقَوْمٍ يَفْقَهُونَ

Meaning: "Indeed, the parable of worldly life is like the water (rain) that We send down on the sky, then it grows abundantly because the water is the plants of the earth, some of which are eaten by humans and livestock. Until the earth has perfected its beauty, and is wearing (also) its ornaments, and the owners of its possessions think that they will certainly dominate it, suddenly Our punishment comes upon it at night or during the day, then We make (its plants) like plants which

(b) The surah of ar-Ra'du verse 3.

Meaning: “And He is the Lord who spread out the earth and made mountains and rivers on it. And making in it all the fruits in pairs, Allah closed the night into the day. Indeed, in that there are signs (of Allah's greatness) for a people who think.”

Meaning: "He makes crops grow for you with rainwater; olives, dates, grapes and all kinds of fruit. Indeed, in that there really is a sign (of Allah's power) for a people who think"

Meaning: "Then eat from every (kind of) fruit and follow the path of your Lord which has been made easy (for you). From the stomach of the bee comes out a drink (honey) of various colors, in which there is a medicine that is healing for humans. Indeed, in that there really is a sign (of God's greatness) for those who think."

Meaning: "And among the signs of His power is that He created for you wives from among yourselves, so that you would be inclined and feel at ease with them, and He made between you feelings of love and affection. Indeed, in that there are indeed signs for a people who think."

Meaning: "Allah holds the souls (people) when they die and (holds) the souls (people) who have not yet died when they sleep; So He holds the soul (person) whose death He has determined and He releases the other soul until the appointed time. Indeed, in that there are signs of Allah's power for a people who think."

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Meaning: "Then We said: "Strike the corpse with part of the cow's member!"

(b) The surah of al-Baqarah verse 242

لَكَ زَلْزَلَةٌ ۖ أَهْلًا لَكُمْ ءَارٌ ۖ لَعَلَّكُمْ تَعْلَمُونَ

Meaning: "Thus Allah explains to you His verses (His laws) so that you understand them."

(c) The surah of al-An'am verse 151

﴿لَا تَقَالُوا أَنَّهُ مَا حَرَّمَ رَبُّكُمْ عَلَيْهِمْ أَنِ لَا تَشْرِكُوا بِهِ شَيْئًا ۚ وَبِالْوَالِدَيْنِ إِحْسَانًا ۚ وَلَئِنْ تَقُولُوا أُولَٰئِكَ مِنِ إِبْلِمْ نَحْنُ نَرِزُكُمْ وَإِنَّهُمْ وَلَٰئِ تَقْرَبُوا
الْفُؤْشَىٰ مَا طَهَّرَ مِنْهَا وَمَا بَطَنَ ۚ وَلَئِنْ تَقُولُوا أُولَٰئِكَ الْإِلَٰهَ بِالْخَلْقِ ۚ لَكُمْ وَصْنُكُمْ بِهِ لَكُمْ تَعْمَلُونَ

Meaning: "Say: "Come, let me recite what has been forbidden to you by your Lord, namely: do not associate anything with Him, be good to both parents, and do not kill your children for fear of poverty, We will provide sustenance for you and for them , and do not approach abominable deeds, whether visible or hidden, and do not kill a soul that Allah has forbidden (to kill) except with something (cause) that is right." That is what you have been commanded to do so that you understand (it).

(d) The surah of Yusuf verse 2

إِنَّا أَنْزَلْنَاهُ لِرُءُونَا عَرَبًا ۖ لَعَلَّكُمْ تَعْمَلُونَ

Meaning: "Indeed, We have sent it down in the form of the Koran in Arabic, so that you can understand it."

(e) The surah of az-Zuhruf verse 3

إِنَّا جَعَلْنَاهُ لِرُءَانَا عَبَآءً ۖ لَّعَلَّكُمْ تَعْمَلُونَ

Meaning: "Indeed, We made the Koran in Arabic so that you understand (it)."

Thus Allah brings back to life the dead, and shows you signs of His power so that you may understand. This verse explains the greatness and power of God which cannot be acknowledged by humans, because God can bring the dead to life.

(2) Hope contains a warning (*afalaa ta'qilun*). There are 12 verses that express the word *afala ta'qilun* which contains positive hope, namely; Surah al-Baqarah verses 44 and 76, Surah al-Imran verse 65, Surah al-An'am verse 32, Surah al-A'raf verse 169, Surah Yunus verse 16, Surah Hud verse 51, Surah al-Anbiya' verse 10 and 67, surah al-Mu'minin verse 80, surah al-Qishash verse 60, and surah Yasin verse 68. The details are as follows: (1) The surah of al-Baqarah verse 44.

﴿۝۱۰﴾ أَتَأْمُرُونَ النَّاسَ بِالْبِرِّ وَتَنْسَوْنَ أَنْفُسَكُمْ وَأَنْتُمْ تَتْلُونَ الْكِتَابَ أَفَلَا تَعْمَلُونَ.

Meaning: "Why do you order other people (to do) the service, while you forget yourself (your obligations), even though you read the Book (Torah)? So don't you think?"

(2) The surah of al-Baqarah verse 76.

وَإِذَا لَمُوا النَّبِيَّ ۖ آمَنُوا لِلَّهِ وَلِأَنَّمَا وَإِذَا خَلَّ بَعْضُهُمْ إِلَى بَعْضٍ لَّاؤًا اتَّخَذُوا لَهُمْ مِمَّا فَتَحَ اللَّهُ عَلَيْكُمُ لِحُجُجِكُمْ بِهِ عِنْدَ رَبِّكُمْ ۚ أَفَلَا تَعْقِلُونَ.

Meaning: "And when they meet those who believe, they say: "We too have believed," but when they are just among themselves, then they say: "Did you tell them (the believers) what Allah explained to you, so that they can defeat your argument before your Lord; don't you understand?"

(3) The surah of al-Imran verse 65.

أَوَلَمْ يَكُنْ لَهُ الْكِتَابُ لِمَ تُحَاجُّونَ فِيهِ إِبْرَاهِيمَ وَمَا أُنزِلَتِ التَّوْرَةُ وَالْإِنْجِيلُ إِلَّا مِنْ بَعْدِي ۖ أَفَلَا تَعْقِلُونَ.

Meaning: "O People of the Book, why do you argue about Abraham, even though the Torah and the Gospel were not revealed but after Abraham. Don't you think?"

(4) The surah of al-An'am verse 32.

وَمَا الْحَيَاةُ الدُّنْيَا إِلَّا لَعِبٌ وَلَهْوٌ وَلَلْآدَارُ الْآخِرَةُ خَيْرٌ لِّ الَّذِينَ تَتَذَكَّرُونَ ۖ أَفَلَا تَعْقِلُونَ

Meaning: "And there is no life in this world, apart from just playing around and joking around. And indeed the village of the afterlife is better for those who are pious. Then don't you understand it?"

(5) The surah of al-A'raf verse 169.

فَخَلَفَ مِنْ بَعْدِهِمْ خَلْفٌ وَرثُوا الْكِتَابَ أَوْ خَدُّونَ عَرَضَ هَذَا الَّذِي يُبَىٰ وَمَنْ يُولُوْنَ سَعًۭا فَرَّ لَنَا وَإِنِ اتَّخَذُوا آلَهُمُ الْغُيُوبِ أَلَمْ نُوَخِّدْ عَنْهُ ۖ مِمَّ ذُنُوبُكُمْ أَن تَكُنَّ الْكِتَابَ أَنَّ لَكُمْ وَلَوْ لَوْوَا عَلَى الْآلِ إِلَّا الْحَكَّ وَدَرَسُوا مَا فِيهِ ۚ وَالْآدَارُ الْآخِرَةُ خَيْرٌ لِّ الَّذِينَ تَذَكَّرُونَ ۖ أَفَلَا تَعْقِلُونَ.

Meaning: "So there came after them a (bad) generation who inherited the Torah, who took the goods of this lowly world, and said: "We will be forgiven." And in the future, if there comes to them that much worldly wealth (too), they will surely take it (too). Hasn't the Torah covenant been taken from them, namely that they will not say anything about Allah except what is true, even though they have learned what is in it? And the village of the afterlife is more for those who are pious. So don't you all understand?"

(6) The surah of Yunus verse 16

لَوْ شَاءَ اللَّهُ مَا تَلَوْتُهُ عَلَيْكَ ۖ وَلَوْلَا إِدْرَاكُمْ بِهِ فَمَدَّ لَبِئْتُ فِلكُمْ عُمْرًا مِّن لَّيْلَةٍ ۖ أَفَلَا تَعْقِلُونَ.

Meaning: "Say: "If Allah had willed, I would not have read it to you and Allah would not (also) have told it to you." In fact I have lived with you for some time before. Then don't you think about it?"

(7) The surah of Hud verse 51.

مَمْۤ وَوَمَآ لَّيَ أَسْأَلُكُمْ عَنْهُ ۖ أَجِ ارْأَا إِنِ اجْرِي إِلَّ عَلَى الَّذِي فَطَرَنِي ۖ أَفَلَا تَعْقِلُونَ

Meaning: "O my people, I do not ask you for wages for my call. My reward is none other than Allah who created me. Then don't you think about (it)?"

(8) The surah of al-Anbiya' verse 10.

لَمَّا أُنزِلْنَا إِلَيْكَ ۖ وَمِنْ كُنْيَا ۖ وَفِي ذِكْرِكُمْ ۖ أَفَلَا تَعْقِلُونَ

Meaning: "Indeed, We have sent down to you a book in which there are causes of glory for you. So don't you understand it?"

(9) The surah of al-Anbiya' verse 67.

أَفَلَا تَعْمَلُونَ
لَكُمْ وَلِمَا تَعْبُدُونَ مِنْ دُونِ اللَّهِ أَفَلَا تَعْلَمُونَ

Meaning: "Ah (woe to) you and what you worship besides Allah. So don't you understand?"

(10) The surah of al-Mu'minin verse 80.

وَهُوَ الَّذِي أَحْيَاكُمْ وَمُتَّكُمْ وَإِلَيْهِ تُخْلَفُونَ وَاللَّهُ يَوْمَئِذٍ أَعْلَمُ بِمَا تَعْمَلُونَ

Artinya: "Dan Dialah yang menghidupkan dan mematikan, dan Dialah yang (mengatur) pertukaran malam dan siang. Maka apakah kamu tidak memahaminya?"

(11) The surah of al-Qishash verse 60.

وَمَا أَوْتِيتُمْ مِنْ شَيْءٍ فَمَتَّعِ اللَّهُ بِهِ الْحَيَاةَ الدُّنْيَا وَزَيَّنَّا لَهَا مَا فِيهَا مِنْ نَجْوَى وَمَا فِيهَا مِنْ عَذَابٍ أَفَلَا تَعْمَلُونَ

Meaning: "And whatever is given to you, it is the enjoyment of worldly life and its ornaments; while what is with Allah is better and more eternal. Then don't you understand it?"

(12) The surah of Yasin verse 68.

وَمَنْ نُنَعِّمِهُ نَمَكِّنْهُ فَإِنَّ الْخَلْقَ أَغْلَبُونَ

Meaning: "And whoever We prolong his life, We will surely return him to (his) occurrence." So don't they think?"

However, there is one exception to the use of the word *ya'qilun* which is associated with the heart or heart. In the context of this verse, the heart can be invited to think like the brain does in the head. This can be seen in Surah al-Hajj verse 46 as follows:

أَفَلَمْ يَسِيرُوا فِي الْأَرْضِ فَتَنْظُرُوا لَهُمْ لُحُوبٌ يُعْمَلُونَ بِهَا أَوْ ءَاذَانٌ سَمِعَتْ مَعْفُونًا بِهِ أَفَلَا يَأْتِيهِمْ لَعْنَةُ اللَّهِ الْكَلْبُوتِ وَلَكِنَّ الْمَلُوبُوتِ فِي الْأَعْدُوتِ

Meaning: "Then do they not walk on the face of the earth and have hearts with which they can understand or ears with which they can hear? Because truly it is not the eyes that are blind, but what is blind, is the heart in the chest."

Understanding the content of the verse above, it seems that Allah is reminding us humans that the human heart can think or understand something and use the ears to hear and if a human being is blind, it turns out that the worst blindness is blindness of the eyes of the heart in the chest. In this case, the function of thinking is not only the brain but also the heart can think. It is true that one expert said that the liver or heart in medical language can essentially function to think.

Fourth, the verse is related to *yu'qinun*. There are 12 verses related to *yu'qinun*, namely surah al-Baqarah verses 4 and 118, surah al-Maidah verse 50, surah ar-Rum verse 60, surah Lukman verse 4, surah as-Sajadah verse 24, and surah at-Tur verse 36. The details are as follows: (a) surah al-Baqarah verse 4.

وَالَّذِينَ هُمْ يُؤْمِنُونَ بِمَا أُنزِلَ إِلَيْكَ مِنْ رَبِّكَ وَبِالْحَقِّ هُمْ وَاسْتَوْنَ

Meaning: "And those who believe in the Book (al-Quran) that has been revealed to you and the Books that have been revealed before you, and they convince in the existence of (life) in the afterlife."

(b) The surah of al-Baqarah verse 118.

وَلَا النَّبِيَّ لَ عَزَّةَ لَمُونَ لَوْلَا كُفَّ لِمَنَا اللَّهُ أَوْ تَأْتِيَنَا آفَافَةٌ كَذِبٌ لَا إِلَهَ إِلَّا الَّذِي مِّنْ لَّيْلِهِمْ مِثْلَ لَوْلِهِمْ ۚ شَبَّهَتْ لِلْوَهْمِ ۚ لَا بَنِيَّ إِلَّا أَلْفٌ تَوَاتَتْ لَيُومٍ وَيَوْمٌ وَلَيْلُونَ.

Meaning: "And those who do not know say: "Why does Allah not (directly) speak to us or do signs of His power come to us?" Likewise those before them had said as they said; their hearts are similar. Indeed, We have explained the signs of Our power to a people who convincing."

(c) The surah of al-Maidah verse 50.

أَفَحُكْمَ الْجَهْلَةِ ۖ بََّعْثُ غُورٍ ۖ وَمَنْ أَحْسَنُ مِنْ اللَّهِ ۖ حُكْمًا لِّمَوِّمٍ ۖ وَلِّينُونَ.

Meaning: "What is the law of Jahiliyah that they desire, and whose (law) is better than Allah's (law) for those who convincing?"

(d) The surah of ar-Ra'du verse 2.

الَّذِي رَفَعَ السُّمُوتَ بِغَرِّ عَمَدٍ تَرْوَاهُ ثُمَّ اسْتَوَىٰ عَلَى الْعَرْشِ وَسَخَّرَ الشَّمْسَ وَالْقَمَرَ كُلٌّ يَجْرِي لِجَوْلِ مُدَّةٍ مُّسَمًّى ذَٰلِكُمْ آيَاتُ اللَّهِ لِلَّذِينَ فَهِمُوا آلَٰتِ اللَّهِ لَعَلَّكُمْ تَعْلَمُونَ

Meaning: "It is Allah Who raised the heavens without pillars (as) you see, then He sat on the Throne, and subdued the sun and the moon. Each circulates until the specified time. Allah regulates the affairs of (His creatures), explains the signs (of His greatness), so that you can convince(your) meeting with your Lord."

(e) The surah of an-Naml verse 3.

الَّذِينَ هُمْ عَنْ صَلَاتِهِمْ سَاهُونَ ۚ وَالَّذِينَ لَمْ يَمْلِكُوا نَفْسَهُمْ بِمَا كَسَبُوا فَيَزِيدُونَ زُبْدَهُمْ حَرِيصًا طَرَفًا فَمَا عَدُوٌّ لَهُمْ ۚ إِنَّ اللَّهَ كَارِهُمُ الْفَاسِقِينَ

Meaning: "(Those are) people who pray and pay zakat and they believe in the existence of the afterlife."

(f) The surah of an-Naml verse 82.

﴿وَإِذَا وَلَّعَ الْمَوْتُ عَلَيْهِمْ أَمْرًا خَرَجْنَا لَهُمْ دَابَّةً مِّنَ الرُّضَىٰ تُكَلِّمُهُمْ أَنَّ النَّاسَ كَانُوا بِأَفْئَتٍ تَوَاتَا لَّهُمْ﴾.

Meaning: "And when the word has fallen on them, We send out a kind of creeping animal from the earth which will tell them, that in fact the former people did not convince Our signs."

(g) The surah of ar-Rum verse 60.

فَأَصْبِرْ إِنَّ وَعْدَ اللَّهِ حَقٌّ وَلَسْتَ تَخْفَنَ الذَّنَّ لَ وَ لُونِ.

Meaning: "And be patient, indeed Allah's promise is true and never let those who do not convince (the truth of Allah's verses) worry you."

(h) The surah of Lukman verse 4.

الَّذِينَ هُمْ عَنْ صَلَاتِهِمْ سَاهُونَ. الَّذِينَ هُمْ عَنْ صَلَاتِهِمْ سَاهُونَ. الَّذِينَ هُمْ عَنْ صَلَاتِهِمْ سَاهُونَ.

Meaning: "(Those are) people who perform prayers, pay zakat and they convince the existence of the afterlife."

(i) The surah of as-Sajadah verse 24.

وَجَعَلْنَا مِنْهُمْ أَلَمَةً هَدًى بِأَمْرِنَا لَمَّا صَبَرُوا وَكَانُوا بِ'أُوتَاتِنَا وُكُلُونَ.

Meaning: "And We made among them leaders who guided them according to Our command when they were patient. And they convince Our verses."

(j) The surah of al-Jasiyah verse 4

وَفِيَّ خَلْقِكُمْ وَمَا يَبْتُتُ مِنْ دَابَّةٍ آتَاتٍ لِمُؤْمٍ وُكُلُونَ.

Meaning: "And in the creation of you and in the creeping animals that are scattered (on the face of the earth) there are signs (of Allah's power) for a people who believe."

(k) The surah of al-Jasiyah verse 20

هَذَا بُصِيرٌ لِلنَّاسِ وَهَدًى وَرَحْمَةً لِمُؤْمٍ وُكُلُونَ.

Meaning: "The Qur'an provides proof for humans through guidance on their scientific track record and mercy (hard work given by Allah) for people (experts) who convince the proof of the truth."

(l) The surah of at-Tur verse 36.

أَمْ خَلُمُوا السُّمُوتِ وَالرَّضَىٰ بَلَّ وُكُلُونَ

Meaning: "And whatever is given to you, it is the enjoyment of worldly life and its ornaments; while what is with Allah is better and more eternal. Then don't you understand it?"

Based on the explanation of the 12 verses above, it can be concluded that before the word *yu'qinun* it always begins with a concrete problem or reality, so that humans obtain the truth of science convincingly. In this case, if students want to get the truth of science convincingly, the lecturer absolutely must provide real, visual and realistic information. This means that Allah put the word *yu'qinun* to mean belief as a human thought process based on reality, concrete or empirical facts of events, which can be seen and proven by the five human senses.

Thus, there are two needs for the human brain to learn from the perspective of the Qur'an, namely scientific information from various related experts and humans need scientific explanations that are realistic. Therefore, the need for the learning brain of adult humans or students at universities requires scientific information from various experts and the Postgraduate School of UIN Syarif Hidayatullah Jakarta has implemented one course taught by various experts. For example, Comprehensive Islamic Studies courses are taught by experts in Tafsir/Hadith science, Islamic History experts, environmental science experts, Islamic Education experts, and gender experts. If applied to the Tarbiyah Faculty, for example learning and learning courses, it will be taught by a team of learning psychology experts (Education), neuroscience experts (neurosains), experts in educational and learning interpretation, and learning design experts. This is in accordance with the implied statement from the words of the *liqoumi yatafakkarun* verse that to uncover the secrets of science, one particular group or community of experts is needed to discover the secrets of a verse in the Koran. For example, to reveal the meaning of Surah an-Nahl 78, we need

exegesis experts, neuroscience experts, education experts and learning design experts so that the meaning of the verse approaches the truth from various scientific perspectives. As for the need for explanations of knowledge to be realistic, the Qur'an repeatedly explains implicitly and explicitly that the basic material for human thinking must contain real events when the lecturer teaches students or in academic language that the lecturer is obliged to explain his knowledge using a scientific approach with its main characteristics is observing.

Student Brain Learning Needs According to Neuroscience

So far, students are used to receiving knowledge from lecturers or from the results of student presentations through discussions and questions and answers and the material received by students is only through hearing (audio information). Audio information is obtained from the inner ear called the cochlea then sent to the temporal lobe network and sent again to the thalamus and hippocampus but the audio information is received as short term memory and only lasts a few hours and the potential knowledge received by students is up to 30 percent and the information tends to be forgotten. . Therefore, the learning needs of students' brains have not been met through audio information to gain knowledge. So, what information does a student's learning brain need? The answer is visual information and sensation (sensory) information as a source of knowledge and long-term memory. What is visual and sensational (sensory) information and how do we explain the escatological (occult) and abstract material that is predominantly found in PAI material into visual and sensational (sensory) material? Neuroscience experts agree that students' learning brains really need two important pieces of information, namely visual information and sensation (sensory) information. **First**, visual information. Visual information obtained from images or objects is original, imitation, symbolic, parable, and *qiyas* (analogy). According to neural network science (neuroscience), visual information comes from the eye senses, in which there are cells called the retina tasked with sending visual information to the occipital lobe. The occipital lobe sends again to the thalamus and hippocampus. It is in the hippocampus that visual information is stored as long-term memory and the brain's potential to recall this information reaches 60%. There are three main requirements for the retina to obtain visual information from images or objects, namely the image or object must be large, the image or object displayed must be clear, especially if the object is an image, and the image or object must be still. If the image or object fulfills three conditions, the retina will definitely send visual information to the occipital lobe and store long-term memory in the hippocampus. Look at the following image of the eye:

Figure 1

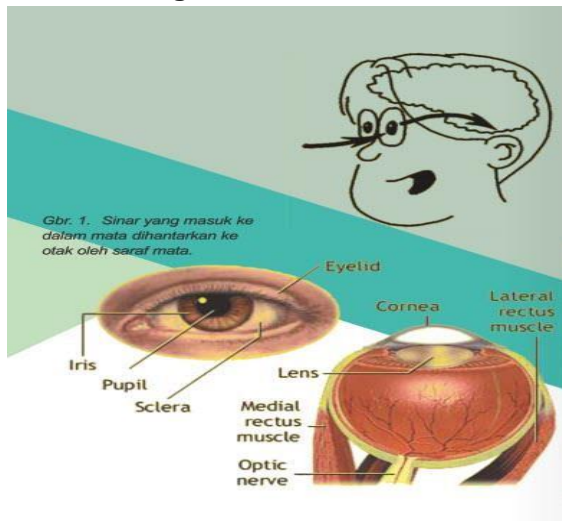


Figure 1.2

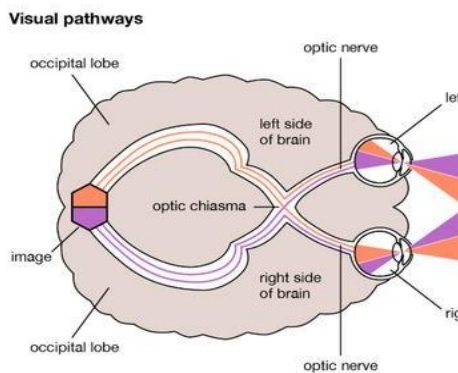
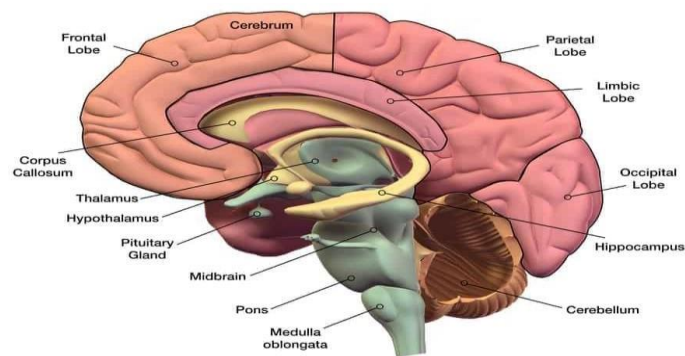


Figure 1.3



The image of the eye and the layout of the retina send visual information to the occipital lobe and then send it to the thalamus and hippocampus in the cerebrum

Figure 1 explains the image of the eye from the outside. Figure 1.1 The position of the retina at the back sends it to the back of the brain tissue. Figure 1.2 The working network of the retina has right and left sides and is located in the occipital lobe. Figure 1.3 The position of the occipital lobe is located in the human head and is located in the big brain (cerebrum).

Second, sensation (sensory) information. Sensation (taste) information comes from three human organs or senses, namely the tongue, nose and skin. The tongue chews food and there is a cell called papillae that sends taste to the parietal lobe. The nose functions to smell and a cell called olfactory sends taste to the parietal lobe. The skin senses touch and a cell called the dermis sends taste information to the parietal lobe. Thus, each of the three senses has its own cell which sends taste information to a lobe, namely the parietal, which then sends the information back to the thalamus and hippocampus. It is in the hippocampus that sensation information is stored in long-term memory and the level of human memory can be up to 90%. According to Gredler (2009:79) that

human learning has a strong understanding of the obligation to touch by the dermis what is the object or objects as a source of strengthening knowledge which is then sent a signal to the parietal lobe (2009:79). Look at the picture of the position of the three organs of sensation.

Figure 2.1 tongue and tissue

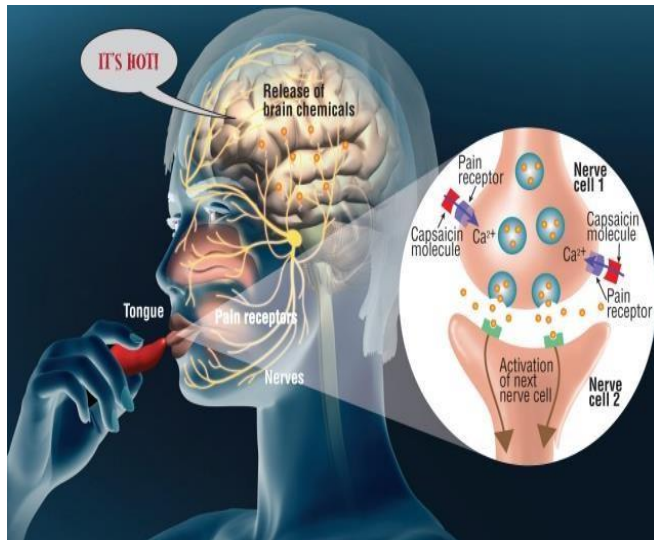


Figure 2.2 tongue and papillae tissue

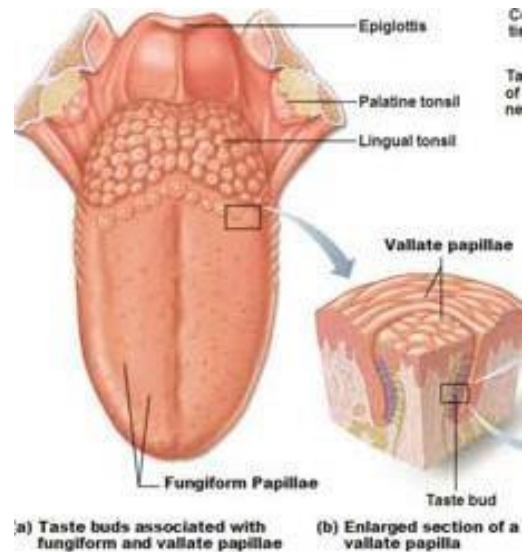


Figure 2.1 explains tongue and its and papillae sends parietal lobe then to thalamus and hippocampus. Figure 2.2 tongue and papillae tissue sends to parietal lobe then to thalamus and hippocampus.

Figure 2.3. alifactory tissue to thalamus and branches

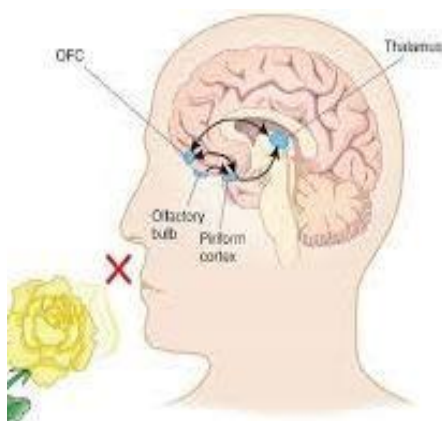
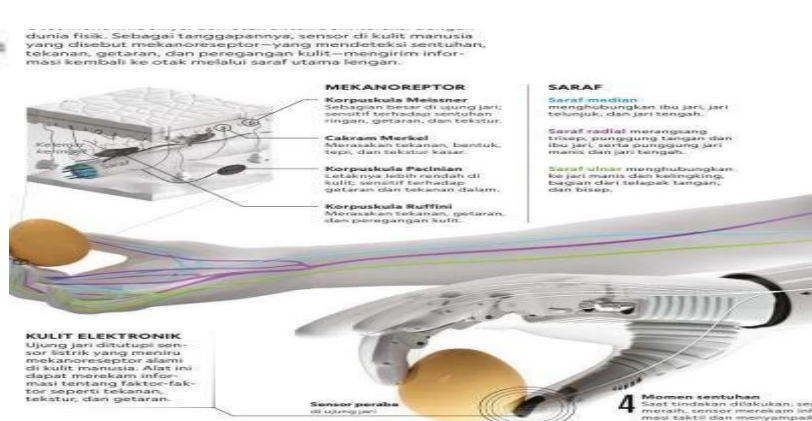


Figure 2.4. skin tissue to the dermis and its



Visual & Sensation Information – Hippocampus - Neocortex – Prefrontal

Figure 2.3 explains nose in alifactory tissue sends to parietal lobe then to thalamus and hippocampus. Figure 2.4. explains skin tissue to the dermis and its branches sends to parietal lobe hen to thalamus and hippocampus.

Figure 3.1 hippocampus sends to neocortex

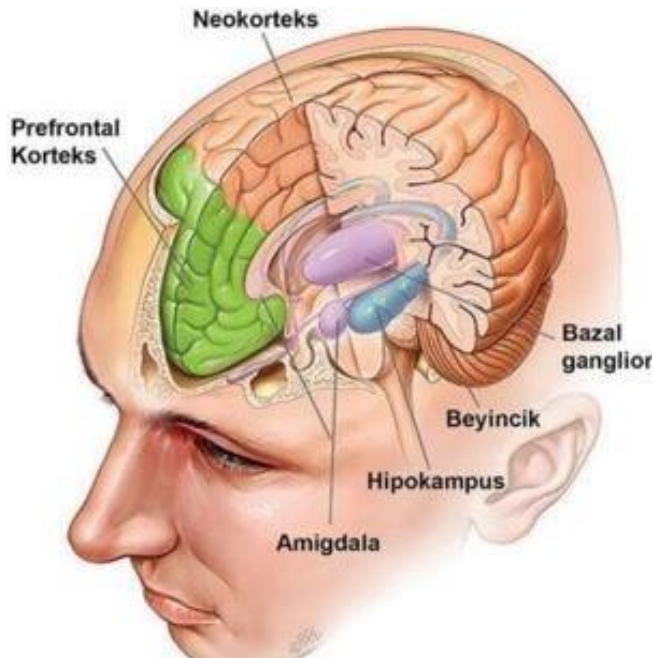


Figure 3.2 anatomi of limbic system



Figure 3.1. The hippocampus functions to send information to the neocortex and the neocortex processes whether the information is valid or not and works together with the cerebral cortex and other nerve networks. Figure 3.2 anatomy of the limbic system functions to process feelings of happiness, pleasure, sadness and memory.

Figura 3.3 Frontal lobe and tissue

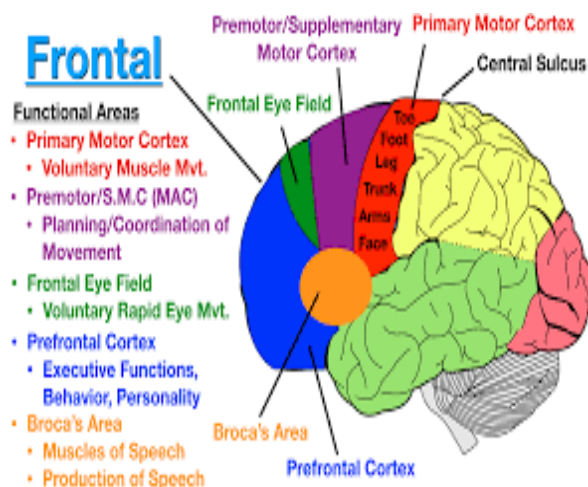


Figure 3.4 Broca area and tissue

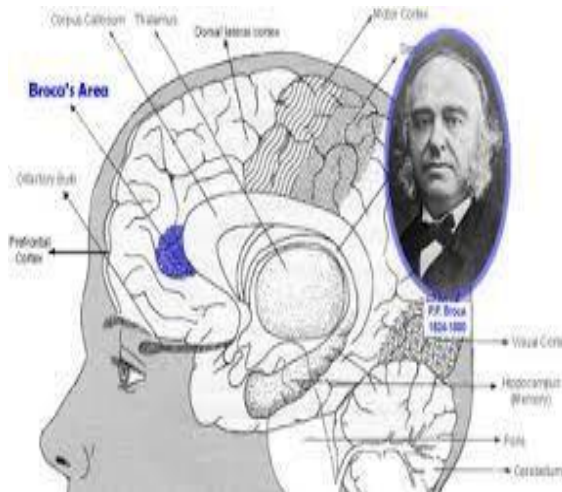


Figura 3.3 Frontal lobe and tissue explains that the function of the frontal lobe network is to plan, coordinate, organize and decide all matters. Figure 3.4 Broca's area and tissue function to send the final decision results to be conveyed to the tongue to be conveyed to other people.

Both visual information received in the occipital lobe and sensation (sensory) information received in the parietal lobe are all sent to the thalamus and stored in the hippocampus (middle brain or limbic system). The resulting sensation information stored in the hippocampus becomes long-term memory and students' memory can be up to 90 percent. Information stored in the hippocampus is processed reciprocally by the neocortex and even sorted to produce valid and accurate information or knowledge, which is then decided finally by the prefrontal whether the information is certain to be true or not. If the prefrontal has decided that the information or knowledge is certain to be true, then the information is sent to the Broca area to be passed on to the tongue to be conveyed to other people. In fact, according to Omrod (2016:47), human learning comes from many places in the nerves and the frontal lobe is the most active nerve in thinking, processing information and events originating from the hippocampus. Gredler calls the human brain a very complex system involving various levels (2009: 72). The hippocampus functions to process declarative memory, namely a type of memory derived from certain facts or events (<https://www.alodokter.com>).

How do lecturers meet the brain needs of students who are studying? The answer is, lecturers are obliged to create all teaching materials in the form of teaching aids related to the material. For example, if a lecturer teaches material on aqidah/morals and wants to explain *riya'* material, he is obliged to bring visual aids in the form of stones, dust and rainwater for all students to see and then touch. If a biology lecturer teaches fibrous roots, he must bring a real corn or rice tree with its roots in front of the students.

Teaching Solutions Meet the Brain's Learning Needs

According to warnings from neuroscience experts, namely Taruna Ikrar (2020), lecturers must be aware that teaching without involving students' brains is futile. This means that if a lecturer teaches material by only lecturing via PowerPoint, discussions, questions and answers, and presentations in class or outside of class, the information that students receive is only audio (auditory) information. Audio information sent from the cochlea to the neural network in the temporal lobe or cerebrum only accounts for 30% of memory and students tend to forget. Therefore, there needs to be a learning revolution in higher education circles by teaching that meets the needs of students' learning brains, namely visual information and sensation (sensory) information, as reminded by neuroscientists that visual information and sensation information are visually and sensorially? The answer is yes. How to present teaching material to be visual and sensational. The answer depends on the teaching material. One way to teach based on the brain's learning needs in the form of visual information and sensation (sensory) information is to explain the material with the help of teaching aids. For example, explaining *riya'* material using stone, dust and rainwater as props using the parable method in the moral aqidah learning course at the madrasah. Students can see the props as visual information and after finishing lectures can touch the props as sensation (sensory) information, both of which are sent to the thalamus and hippocampus as long-term memory storage. As in the following image.

Figura 4



Students are explaining riya' material using stones, dust, bottled water, needles, containers, charity boxes, money, and a miniature mosque

Conclusion

Based on this description, it can be concluded that the learning needs of students' brains according to the Qur'an are that humans need scientific information from various related experts and this knowledge needs to be explained visually or in real terms. Regarding the learning needs of students' brains, according to neuroscience, students' brains need visual information and sensation (sensory) information. Therefore, a successful teaching solution for lecturers is to be obliged to explain open material with the help of visual aids and in a team manner.

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