The Contribution of Ibnu Sina Multilevel Intellect and Neuroscience: in Learning Al-Qur'an Hadith in Vocational High Schools in the Covid-19 Era

Mohammad Jailani
Institut Studi Islam Muhammadiyah Pacitan
Address: Jl. Gajahmada No.20, Purwoharjo, Baleharjo, Pacitan, Jawa Timur, 63511
e-mail*: m.jailani@isimupacitan.ac.id*

Suyadi
Universitas Ahmad Dahlan Yogyakarta
Address: Jl. Kapas No.9, Semaki, Umbulharjo, Yogyakarta, DI Yogyakarta, 55166
e-mail: *suyadi@fai.uad.ac.id*

Abstract

Due to the Covid-19 pandemic, learning of the Qur'an and Hadith is less effective, its impact on student learning. One of them is because learning is not by the brain-based way of learning for students. This study aims to analyze the learning of Al-Qur'an Hadith at SMK Muhammadiyah 3 Yogyakarta in the covid-19 era from the perspective of Ibn Sina's multilevel reasoning and neuroscience. This research data through (search) the literature description of scientific journals and observation of research work references, as well as interview information data at schools. This research is a literature study with a qualitative method. Research results prove that learning the Qur'an and Hadith based on Ibn Sina's level of reasoning and neuroscience, can understand the material theoretically and empirically, both theoretically learning with tajwid and in practice the law of recitation and makhurijul huruf. Learning that has implications for students in understanding, developing interest, evaluating, and producing learning works on the discourse of the Qur'an Hadith.

Keywords: Al-Qur'an Hadits; Covid-19; Ibnu Sina multilevel intellect; learning

Abstrak

Adanya Pandemi Covid-19 pembelajaran Al-Qur'an Hadits kurang efektif, dampaknya terhadap belajar siswa. Di antaranya karena pembelajaran belum sesuai dengan cara belajar siswa berbasis otak. Penelitian ini bertujuan menganalisis pembelajaran Al-Qur'an Hadits di SMK Muhammadiyah 3 Yogyakarta pada era covid-19 dalam perspektif akal bertingkat Ibnu Sina dan neurosains. Data penelitian ini melalui (penelusuran) terhadap literatur deskripsi jurnal ilmiah maupun pencermatan terhadap referensi-referensi karya penelitian, serta data informasi wawancara di sekolah. Penelitian ini merupakan studi kepustakaan dengan metode kualitatif. Hasil penelitian membuktikan bahwa pembelajaran Al-Qur'an Hadits berbasis akal bertingkat Ibnu Sina dan neurosains, mampu memahami materi secara teoritik dan emperik baik belajar secara teori dengan ilmu tajwid maupun secara praktek hukum tajwid dan makhirujul huruf. Pembelajaran yang berimplikasi pada siswa dalam memahami, mengembangkan minat, mengevaluasi, dan menghasilkan karya belajar terhadap diskursus Al-Qur'an Hadits.

Katakunci: Al-Qur'an hadits; akal bertingkat Ibnu Sina; neurosains; pembelajaran

A. Introduction

The most important activity and the main thing in learning is the approach between teachers and students, how teachers communicate and interact with students even though the situation does not allow it well.[1] This certainly has implications for the mental state of a student and educator to maintain mental health or a strong immune power.[2] It is important for a focused learning to support good results so that the role of students as learning subjects receives complete information.[3] learning activities by the circumstances of the students are very much needed during the Covid-19 pandemic.[4] So that students do not feel burdened by learning, because students already find it difficult to find information and get material from the teacher.[5] So that it can be effective and

---

[1] Abdul Wahid Hasyim, 'Al-Tariqah Al-Naqshabandiyah Al-Khalidiyah Fi Cianjur, Jawa Al-Gharbiyah: Ta'alimuha Wa Tuqsuha Wa Tatawwuratuha', Islamic Studies, 27.2 (2020), 1–56.

[2] Syamsul Anwar, 'Developing a Philosophy of Scientific Advancement in Muhammadiyah Higher Education Institutions Based on Al-Islam and Kemuhammadiyahan (AIK) Principles', Afkaruna: Indonesian Interdisciplinary Journal of Islamic Studies, 17.1 (2021) <https://doi.org/10.18196/afkaruna.v17i1.9017>.

[3] Adeyemi Balogun, 'Religion and Prejudice: Perspectives on the Tablighi Jama'at in Ede, Southwest Nigeria', International Journal of Islamic Studies, 1.2 (2021), 1–15.

[4] Waharjani Waharjani, 'children's Faith Education In An Interfaith Marriage Family (A Case Study of Moslem and Catholic Couples in the Special Region of Yogyakarta)', in International Seminar On Education, 2020, 679–91.

[5] Yusmaliana Desfa and others, 'Creative Imagination Base on Neuroscience : A Development and Validation of Teacher' s Module in Covid-19 Affected Schools', Universal Journal of Educational Research, 8.1 (2020), 5849–58 <https://doi. org/10.13189/ujer.2020.082218>.

efficient in learning.[6] But in reality, the relationship between teachers and students during the Covid-19 pandemic is less effective and efficient in classroom learning. plus it is related to learning the Qur'an Hadith, very far from what is expected in the Al-Qur'an Hadith curriculum.[7] In the Al-Qur'an Hadith curriculum, students are expected to know and practice Islamic religious learning in everyday life both at school and in the surrounding environment.[8] Some students are far from their teachers, due to ineffectiveness in relationship and learning communication.[9]

The main problem in this research is the presence of Covid-19 in March 2020, hampering student learning at school. On the one hand, there are appeals from the government including maintaining social distance, wearing masks, and washing hands with soap, prohibiting crowds. Teaching and learning activities in schools become online (distance learning).[10] Although learning continues, however, learning does not run normally and smoothly.[11] Teachers and students are very difficult and even burdened in carrying out learning activities to deliver learning materials.[12] Especially in learning Al-Qur'an Hadith in learning Al-Qur'an Hadith. Learning Al-Qur'an Hadith is less focused on mastering the material of recitation and *makhurijulhuruf* . The spread of the Covid-19 outbreak neglected to learn even those affected were not only one school or two schools. In general, in 2020, almost all of the teaching and learning processes in the realm of

---

[6] Suyadi and Hendro Widodo, 'Millennialization Of Islamic Education Based On Neuroscience In The Third Generation University In Yogyakarta Indonesia', QIJIS: Qudus International Journal of Islamic Studies, 7.1 (2019), 173–202 <https://doi.org/DOI : 10.21043/qijis.v7i1.4922>.

[7] Mohammad Jailani, Suyadi, and Dedi Djabedi, 'Traveling the Traces of the Brain and 'Aql in the Qur'an Perspective of Neuroscience and Islamic Education in the Era of the COVID-19 Pandemic', Tadris: Journal of Islamic Education, 16.1 (2021), 1–19 < https://doi.org/10.19105/tjpi.v16i1.4347>.

[8] Mohammad Jailani, Suyadi, and Betty Mauli Rosa Bustam, 'The First HISPISI' s International Conference on Humanities , Education , Law , and Social Sciences " New Findings during Pandemic in Social Science , Humanities , Education and Law "', in Neuroscience Based Islamic Learning a Critique of the Holistic Education Crisis in Pamekasan Madura, ed. by Professor James A. Banks and others (Jakarta: State University of Jakarta, 2021), 123–34.

[9] Mohammad Jailani and others, 'Strengthening a Neurolinguistic Approach in Learning: A Case Study on Arabic Learning at Madrasah Aliyah', Al-Thariqah Journal of Islamic Education, 6.1 (2021), 152–67.

[10] Hendro Widodo, 'The Role of School Culture in Holistic Education Development in Muhammadiyah Elementary School Sleman Yogyakarta', Dynamics of Science, 19.2 (2019), 265–85 <https://doi.org/10.21093/di.v19i2.1742>.

[11] Suyadi, Zalik Nuryana, and Niki Alma Febriana Fauzi, 'The Fiqh of Disaster: The Mitigation of Covid-19 in the Perspective of Islamic Education-Neuroscience', International Journal of Disaster Risk Reduction, 51.2 (2020), 101848 <https:/ /doi.org/10.1016/j.ijdrr.2020.101848>.

[12] Yogi Febriandi and Yaser Amri, 'Stuck In Sharia Space The Experiences of Christian Students in Langsa, Aceh', Al-Jami'ah, 59.1 (2021), 33–56 <https://doi.org/10.14421/ajis.2021.591 .33-56>.

education will be experienced.[13] Students find it difficult to follow the online material delivered by the tutor, just an example at SMK Muhammadiyah 3 Yogyakarta. Likewise, teachers are also confused, because there are no creative and innovative ideas in learning Al-Qur'an Hadith. So far, the learning implemented in schools is mostly conventional models. As for SMK Muhammadiyah 3 Yogyakarta, the learning implemented is module-based. Meanwhile, the purpose of the Al-Qur'an Hadith curriculum is to produce a younger generation (students) who understand and are guided by the Qur'an.

So far, research on Islamic education with Ibn Sina's multilevel reasoning approach has also been studied by Kharisma 2020, in a scientific article (Edukasia Islamika: Islamic education journal) about his research on "Ibn Sina's Multilevel Intellect and Bloom's Taxonomy in Islamic Education with a Neuroscience Perspective", the results of his research show that Ibn Sina's multilevel reasoning relates to Bloom's Taxonomy at the stage of thinking in Islamic education learning. The same thing was also researched by Handayani 2019, in a scientific journal (Ta'dibuna) the focus of the research was "The Relevance of Ibn Sina's Multilevel Concept of Intellect in Islamic Education in the Millennial Era, with the results of his research that according to Ibn Sina there are four levels: material sense, reason talent, actual reason, and acquisition sense, which have implications for Islamic education.

In contrast to this study, based on this, the researcher argues that this research is still new and its authenticity is very interesting in research bases and educational institutions that are currently in the Covid-19 pandemic. As a learning innovation in the field of Al-Qur'an Hadith, as well as an alternative to online learning.[14] Provide motivation and provide convenience to students during the Covid-19 pandemic, where many students experience learning difficulties, just an example: students find it difficult to understand the material, the impact of Covid-19 that affects students' psychology, difficulty in internet connection due to online, and lack of motivation to learn. The alternative is by the researcher as the novelty of this research. The research is "The Contribution of Ibn Sina's Multilevel Intellect and Neuroscience to the Development of

---

[13] Benaouda Bensaid, Salah Ben Tahar Machouche, and Mustafa Tekke, 'An Islamic Spiritual Alternative to Addiction Treatment and Recovery', Al-Jami'ah, 69.1 (2021), 127–62 <https://doi.org/10.14421/ajis .2021.591.127-162>.

[14] Fathurrosyid, 'The Moderation Reason of Gus Baha's Interpretation'; The Contestation Study on the Study of Al-Qur'an Interpretation on Youtube', SUHUF: Journal of the Study of the Qur'an and Culture, 13.1 (2020), 77–101 <https://jurnalsuhuf.online/suhuf/article/view/528/ 206>.

Islamic Culture, Civilization, and Education in the Covid-19 Period", in Islamic educational institutions. As a novelty and a continuation of research from previous research, where researchers explore the facts of the literature (literature review).[15]

This research is based on a logical and relevant argument today that learning the Qur'an and Hadith with Ibn Sina's multilevel reasoning approach and neuroscience is very helpful and supportive in learning for students at school and at home.[16] Directing Ibn Sina's four-level approach to reason and neuroscience had an impact on his cognitive, affective and psychometric abilities, in particular on understanding.[17] As far as learning Al-Qur'an Hadith, so far it is less attractive to students' thinking patterns and activities.[18] because it is more directed at learning examples of lectures, writing, or more on theory, causing students to feel depressed and feel bored.[19] Imagine especially in the online era, the importance of a good learning approach.[20] The problem of loss of confidence in learning is also a lot of approaches or learning models but also do not work.[21] Therefore, in terms of research with this research, and based on the assumptions of previous studies, it has proven a lot of success, namely Ibn Sina's approach to neuroscience and multilevel reasoning in learning, especially in the Al-Qur'an Hadith.[22] Later, it will become a force for the implications of Islamic education discourse to become a new finding that so far many educators have not researched.[23]

---

[15] Suyadi and Sutrisno, 'A Genealogycal Study of Islamic Education Science at the Faculty of Tarbiyah and Teacher Training UIN Sunan Kalijaga', Al-Jami'ah, 56.1 (2018), 29–58 <https://doi.org/10.14421/ ajis.2018.561.29-58>.

[16] Suyadi, 'Islamic Education and Neuroscience', in the Association of Graduate Programs of MUhammadiyah 'Aisyiyah Higher Education (APPPTMA) (South Sulawesi: 6th KNAPPPTMA, 2017), 8–9.

[17] Muhammad Yusuf, 'al-qur'an hadith teacher's learning strategy in improving the characteristics of karimah students at bosowa international school Makassar Sma' (Uin Alauddin Makassar, 2016).

[18] Desfa et al., "Creative Imagination Base on Neuroscience : A Development and Validation of Teacher ' s Module in Covid-19 Affected Schools."

[19] Mauro Pesenti and others, 'Neuroanatomical Substrates of Arabic Number Processing, Numerical Comparison and Simple Addition: A PET Study', Journal of Cognitive Neuroscience, 12.4 (2021), 461–79 <https://doi.org/10.1016/s1053- 8119(18)31064-4>.

[20] Syahidin Tatang Hidayat, 'Innovation of Al-Qur'an Hadith Learning Through Contextual Teaching and Learning Models in Improving Students' Thinking Levels', Journal of Al-Qur'an Hadith, XVI.2 (2019), 115–36.

[21] Muhamad Fathoni Cahya Edi Setyawan, 'design Of Arabic Language Learning Concept With Quantum Teaching Model', Al-Ta'rib Journal of Arabic and Arabic Language, 6.1 (2018), 60–79.

[22] Stephan E. Vogel, Celia Goffin, and Daniel Ansari, 'Developmental Specialization of the Left Parietal Cortex for the Semantic Representation of Arabic Numerals: An FMR-Adaptation Study', Developmental Cognitive Neuroscience, 12.1 (2015), 61–73 <https: //doi.org/10.1016/j.dcn.2014.12.001>.

[23] Apri Wulandari and Suyadi, 'Development of Positive Emotions in Islamic Education from a Neuroscience Perspective', Tadrib Islamic Education, 5.1 (2019), 51–67.

This new finding, about the neuroscience-based learning approach and Ibn Sina's approach to thinking in its multilevel sense, is very relevant and has the potential to help the Al-Qur'an Hadith curriculum. And the newest learning and learning media, teachers are more innovative and creative during the Covid-19 pandemic.[24] Because there is a special motivation in his thinking style, the students are very enthusiastic about learning about the Al-Qur'an Hadith.[25] Thus this research is very interesting to do and get the results of the research. The research findings will become a new course in the field of Islamic education learning, which leads to the role of teachers in student learning during the Covid-19 pandemic.[26]

B. Research Method

This study uses a qualitative approach. The data is generated through the library research method (Library Study). In a library, data is obtained through examining the research literature in the form of articles, books, scientific journals (National and International journals), as well as observing the analysis of scientific works that focus on discussing the neurolinguistic approach to learning Al-Qur'an Hadith.[27] The formal object in this research is to focus on learning the Qur'an and Hadith, while the material object is neuroscience and Ibn Sina's multilevel reasoning approach during the Covid-19 pandemic.[28] The following are the stages of qualitative approach research:

---

[24] Anne L. Beatty-Martínez and Paola E. Dussias, 'Revisiting Masculine and Feminine Grammatical Gender in Spanish: Linguistic, Psycholinguistic, and Neurolinguistic Evidence', Frontiers in Psychology, 10.5 (2019), 1–17 <https://doi. org/10.3389/fpsyg.2019.00751>.

[25] Rahmat Ryadhush Shalihin and others, 'Rational Brain Transmutation Into Intuitive Brain Based on Neuroscience in Islamic Education', in Rational Brain Transmutation Into Intuitive Brain Based on Neuroscience in Islamic Education (Bukittinggi, Indonesia: BICED, IAIN Bukittinggi, 2021), 1–10 <https://doi.org/10.4108/eai.14-9-2020.2305691>.

[26] Helen Abadzi, 'How to Speed up Arabic Literacy for Lower-Income Students? Some Insights from Cognitive Neuroscience', How to Speed up Arabic Literacy for Lower-Income Students?, 1.9 (2012), 1–23 <https://doi.org/10.1596/26823>.

[27] Saihu Saihu, 'concepts Of Islamic Education Renewal According To Fazlurrahman', Andragogi: Journal of Islamic Education and Management of Islamic Education, 2.1 (2020), 82–95.

[28] Sugiyono, Qualitative Quantitative Research Methods and R&D, 1st edn (Bandung: Alfabeta, 2012).
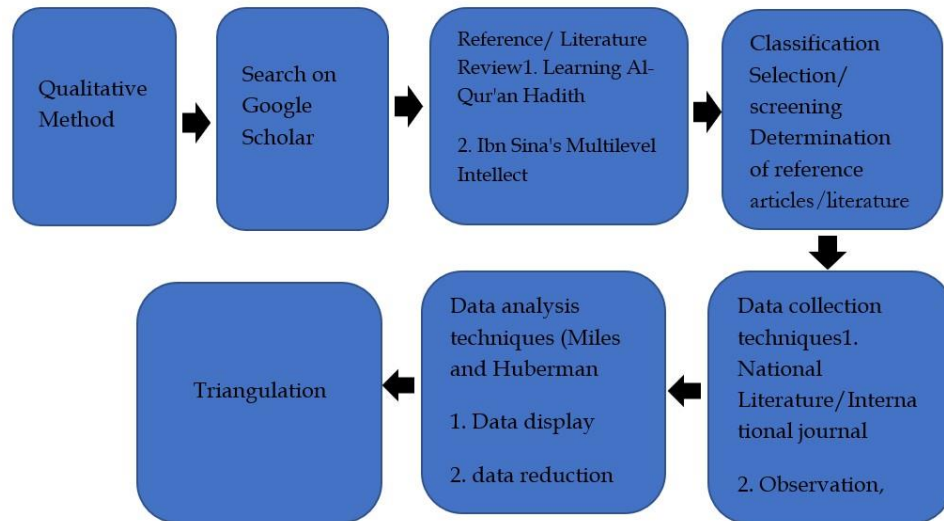
Figure 1. Research Stages Flow

Data is collected through (search) the database on goggle scholars with the keywords:1. Educational learning of Al-Qur'an Hadith, 2. Ibn Sina's stratified intellect 3. Neuroscience and 4. Islamic education. Based on (search) those keywords. Appears 50 (fifty scientific articles), of the 50 (fifty articles) were clarified by researchers by this research. With that, it can be set to 20 (twenty articles) that meet the criteria according to the theme of this study. Taking data from national journals, international journals, reference books, and scientific works (thesis and dissertation).[29]As well as evidence of information on interview data with teachers and students on the experiences and circumstances experienced by students focusing on learning the Al-Qur'an Hadith during the Covid-19 pandemic. Researchers also interviewed local teachers both in the waka of curriculum affairs and local school leaders. The tools used are interview and observation instruments through communication tools with interview guidelines, meaning that this research utilizes holistically and universally from primary and secondary data sources as well as interview review observation information in the form of teaching and learning activities of Al-Qur'an Hadith during Covid-19.[30]

The data analysis technique used in this research is content analysis Following Miles and Huberman, to test and prove Ibn Sina's multilevel Intellect approach and neuroscience facilitates and improves the quality of students' abilities both theoretically

---

[29] I mean, Methodology of Development of Integrative Thinking Dialectical Approach (Yogyakarta: Pustaka Pelajar, 2016).

[30] Susan L Morrow, 'Qualitative Research in Counseling Psychology: Conceptual Foundations', The Counseling Psychologist, 35.2 (2007), 209–35.

and empirically towards understanding the learning of Al-Qur'an Hadith.[31] Through data display, data reduction, and data verification, which is strengthened by the validity of the data through triangulation. Based explicitly on the subjects of Al-Qur'an Hadith which so far many educators have not applied, and have not been socialized to students both in schools and informal and non-formal madrasas. Especially in the implementation during the pandemic which was adapted and applied to the situation of students who were burdened by the psychological impact of Covid-19.[32]

The purpose of this study was to analyze the students' abilities using Ibn Sina's approach to neuroscientist and multilevel reasoning. Having relevance to the thinking stage of students in learning the Qur'an Hadith, namely Ibn Sina's material sense, namely remembering (*tadzakkara*) and understanding (*tafhim*), the material for the rules of knowledge of the Qur'an Hadith.[33] The second reason is the correlation talent by applying the learning of Al-Qur'an Hadith that has been understood, the 3rd actual sense is used to analyze the learning of the Al-Qur'an Hadith theory and is used to evaluate learning then the acquisition sense functions as to produce a learning outcome that can be obtained. by publishing a study result or the like.[34] This is so that students are encouraged and interested in Al-Qur'an Hadith.[35] Not monotonous and feeling bored, that is the reason that has been considered difficult to learn Al-Qur'an Hadith.[36] It's very easy to master communicating in everyday life, including in a pandemic. The focus of this research is to find out the important role of the brain in students, through Ibn Sina's multilevel reasoning relevance approach.[37] Influencing the students' brains to be more

---

[31] Sarah L. Weinberger-Litman, 'A Look at the First Quarantined Community in the USA: Response of Religious Communal Organizations and Implications for Public Health During the COVID-19 Pandemic', Journal of Religion and Health, 2020, 1–14.

[32] Nabi, 'The Impact of Entrepreneurship Education in Higher Education: A Systematic Review and Research Agenda', Academy of Management Learning & Education, 16.2 (2017), 277–99.

[33] Heru Widi Widodo, 'Tafsir of Neuroscience Verses and Verses Ending Afalaa Ta'qilun', MUDARRISUNA Journal: Media for the Study of Al-Qur'an Hadith, 9.1 (2019), 234–48.

[34] Desfa et al., "Creative Imagination Base on Neuroscience : A Development and Validation of Teacher ' s Module in Covid-19 Affected Schools."

[35] Hendro Widodo, Sutrisno Sutrisno, and Farida Hanum, 'The Urgency of Holistic Education in Muhammadiyah Schools', Al-Ta Lim Journal, 26.2 (2019), 160–74 <https://doi.org/10.15548/jt.v26i2.549>.

[36] Mohammad Jailani, Suyadi Suyadi, and Muallimah Muallimah, 'Development of Quranic Hadith Learning with Ibn Sina's Leveled Intellectual Approach at SMK Muhammadiyah 3 Yogyakarta Based on Neuroscience: During the Covid-19 Pandemic', SALAM: Social and Cultural Journal of Syar-I, 8.4 (2021), 1051–66 <https://doi.org/10.15408/sjsbs.v8i4.18995>.

[37] Siti Nur Hidayah, 'Pesantren For Middle-Class Muslims in Indonesia (Between Religious Commodification and Pious Neoliberalism', Qudus International of Islamic Stuies (QIJIS), 9.1 (2021), 209–44.

active in learning to learn to accept the learning situation, not feeling a burden but is a joy in itself in understanding science and Al-Qur'an Hadith.[38].

C. Research Findings and Discussion

The results of this study are presented based on the themes generated during the process of this research running to collect data in the field which also answers the variables in the formulation of the problem questions above. Based on the data analysis, it was found that several main theme substances affect the results of this study, namely

1. **Implementation of Learning Al-Qur'an Hadith Based on Ibn Sina's Level of Intellect and Neuroscience**

The teacher gives understanding to students about learning the Qur'an and Hadith reviewing the first level of reasoning approach, namely by making material sense to students done online.[39] With the existing abilities, students remain consistent and focused on learning materials. Assessing students whether they really follow and understand the lesson.[40] It is a good awareness effort to explain to students so that they can recognize, respond well, and more importantly understand that learning Al-Qur'an and Hadith is the learning taught by the Prophet Muhammad Swa. It is related to the guidelines for the order of human life and the hope of being devoted to Allah by referring to the Qur'an and the Prophet's Hadith with the method of training, character, and emotional guidance, as well as the experience of students.[41]

Al-Qur'an Hadith must be able to have implications for students in every activity, describe sincere and sincere values in goodness during the Covid-19 pandemic online learning.[42] The material sense approach is a good target for students in the developmental stage, distance learning taught by teachers does not only convey and abort obligations as educators. But also how students have good development and reasoning in understanding

---

[38] Jailani et al., "Meneguhkan Pendekatan Neurolinguistik Dalam Pembelajaran : Studi Kasus Pada Pembelajaran Bahasa Arab Madrasah Aliyah."

[39] Widianti, 'Implementation of Al-Qur'an Hadith in Building Religious Values in Muhammadiyah 3 Metro Junior High School Students' (Postgraduate Program at Raden Intan State Islamic University Lampung, 2019).

[40] Pesenti et al., "Neuroanatomical Substrates of Arabic Number Processing, Numerical Comparison and Simple Addition: A PET Study."

[41] Suyadi Kasno, 'Aql and the Brain in the Study of Neuroscience and Its Implications of Scientific Approaches in Islamic Education', Muaddib: Educational and Islamic Studies, 1.2 (2019), 154–77.

[42] Adib Rifqi Setiawan, 'Scientific Literacy Worksheets for Distance Learning in the Topic of Coronavirus 2019 (COVID-19)', Reading Academy, 2.1 (2020), 1–9.

the material[43]. At this stage of material sense, students are directed to have high memory potential and high power to understand.[44] Students already have the potential to develop the theories taught by the teacher.[45] At this stage, the teacher is smarter in choosing the teaching material presented.[46]

From the results of the literature review research (library study) on the research base of Google Scholar or Google Scholar. For this research to be sharper and strengthen the researchers tried to add the results of field research, to be precise at SMK Muhamamdiyah 3 Yogyakarta, with the interview method guided by the interview guidebook. The results of the research can be seen in the description below:

Based on the results of interviews from the Muhammadiyah 3 Yogyakarta Vocational School: "the majority of students have not been able to read the Al-Qur'an or in the other Al-Qur'an Hadith folders, they have not been able to respond to the material with understanding, including students who have not been able to read the Qur'an." an. Have not been able to study Arabic letters (*hijaiyah*) in the science of recitation. Meanwhile, the target in class X (ten) is that all students must be able to read the Qur'an, at least they can spell *hijaiyah* letters. With the Material Intellect Approach, such as the tenth-grade students are presented with the most basic stages. Material reason is a stage of formation of reason, physically, and taste.[47]

In this order of reason, students are taught the basic theories of *tajwid* in the Qur'an but stay away from imposing the nature of reason that is too difficult, for example, students are given *hijaiyah* letters (*makhorijul huruf*). This means that students practice more in conveying the *hijaiyah* letters one by one.[48] In online learning, the contents and materials of the basic stages of recitation are presented, the application of which is in the

---

[43] Abadzi, "How to Speed up Arabic Literacy for Lower-Income Students? Some Insights from Cognitive Neuroscience."

[44] Vogel, Goffin, and Ansari, "Developmental Specialization of the Left Parietal Cortex for the Semantic Representation of Arabic Numerals: An FMR-Adaptation Study."

[45] Rachel I. Mayberry and others, 'Neurolinguistic Processing When the Brain Matures Without Language', Brain Maturation Without Lanaguage, 1.4 (2017), 1–15.

[46] Todd R. Ferretti and others, 'How Discourse Constraints Influence Neurolinguistic Mechanisms during the Comprehension of Proverbs', Cognitive, Affective and Behavioral Neuroscience, 20.3 (2020), 604–23 <https://doi.org/10.3758/s13415-020 -00790-9>.

[47] Students, Interview About Neuroscience-Based Learning in Islamic Education Learning (Yogyakarta, 2021).

[48] Suyadi Kharisma Noor Latifatul Mahmudah, 'Ibn Sina's Multilevel Intellect and Bloom's Taxonomy in Islamic Education from a Neuroscience Perspective', Islamic Education: Journal of Islamic Education, 5.1 (2020), 121–38; Wulandari Apri and Suyadi, 'Development of Positive Emotions in Islamic Education from a Neuroscience Perspective', Tadrib, 5.1 (2019), 51–67.

practice of reading and reciting the *hijaiyah* letters. The following is a description of the Material Intellect from Ibn Sina's point of view:

Figure 2. Image of material sense in humans.[49]

Figure 2. above is the human material mind, a gift of power given by Allah SWT to all His creatures, especially humans, which among the benefits or privileges of this mind include understanding the descriptions in the brain that have not been painted.[50] With the development of this transdisciplinary neuroscience, it is closely related to several scientific points of view, including there is a connection with the thoughts of Ibn Sina, who we know as a scientist who is often known for his educational concept. But the researcher wants to be more specific on how Ibn Sina thinks about the concept of reason, which has broad implications for learning the Qur'an and Hadith. Ibn Sina recognizes this mind as *al-'uqul al-Hayyulaniyyah* intellectual material, developing materials or information in the brain that is processed into good ideas.[51] With this approach, students are adjusted to their material sense, which is directed to be applied in processing the material and even analyzing the material provided by the teacher through distance learning (online) at home.[52] This material sense has the potential to gain knowledge and experience related to learning the Qur'an and Hadith.[53]

---

[49] Cah Bagus, 'al-Qur'an, Concerning The Position Of Reason And Thought', The Qur'an and Science, 2011 <http://gusmendem-dua.blogspot.com/2011/10/al-quran-about-kesaatan- sense-and.html>.

[50] tosin Akerele, 'Embodied Conceptualisation In Yorùbá : Evidence From Spatial', Journal of West African Language, 1.2 (2021), 40–16.

[51] Yoke Lian Lau, Chek Kim Loi, and Mohd Nor, 'The Historical Development of The Study of Broca's Aphasia', Malang Neurology Journal, 7.2 (2021), 125–28 <https://doi.org/10.21776/ub.mnj .200.007.02.8>.

[52] Ibrahim Onnur Akkurt, 'Neurolinguistics: A Spectrum of Research Neurolinguistics: Bir Arastirma Spectrum', Turkish Journal of Educational Research, 2.1 (2021), 24–27 <https://doi.org/10.51242/saka-tjer.2021.10>.

[53] Beatty-Martínez and Dussias, "Revisiting Masculine and Feminine Grammatical Gender in Spanish: Linguistic, Psycholinguistic, and Neurolinguistic Evidence."

The second level of reasoning is the talent sense in the teacher's approach to maximizing the students' interest in learning the Qur'an and Hadith. Motivating students to improve their learning, related to theoretical and practical learning in the Al-Qur'an Hadith book.[54] Teachers prioritize an important role in this regard, seeking students to respond to material information presented in learning to coincide with the Covid-19 pandemic.[55] In this way, students are stimulated to grow a strong interest. Curiosity grows in learning, so that ideas or learning ideas grow in the application of the Qur'an Hadith.[56] That will have an impact on the way of learning, especially learning activities at home. And the role of parents here is also to accompany students as students at home.

Figure 3. Students learn Online[57]

The picture shows students of SMK Muhammadiyah 3 Yogyakarta studying online at home, independently without being directed. This means that the sense of talent possessed in the function of the brain is functioning properly. Thus learning Al-Qur'an Hadith is by what is expected by the tutor.[58] Students develop their potential with strong

---

[54] Muhammad Habibulloh Ali Arifin, 'The Effectiveness of the STAD Cooperative Learning Model Using Quran Teaching Aids to Improve Tajweed Mastery', J-PAI: Journal of Al-Qur'an Hadith, 2019, 189–202.

[55] Taufik Pasiak, Brain Based Learning Are Learning Techniques That Refer To Brain Work By Managing Learning Styles, Processing Information, Response Patterns And Using Imagination (Bandung: PT Mizan Pustak, 2012).

[56] Qiqi Yuliati Zaqiah Hisny Fajrussalam, Koko Adya Winata, Ihin Solihin, 'Ramadan Islamic Boarding School Learning Innovations in Improving Students' Spiritual Intelligence During the COVID-19 Pandemic', EduTeach: Journal of Education and Learning Technology, 1.2 (2020), 1–10 <https http://doi.org/10.37859/eduteach.v1i2.1949>.

[57] Students, Documentation of Neuroscience-Based Learning Activities Online (Yogyakarta, 2021).

[58] Fauzi Muhammad Ilfan, 'Use of Neuroscience in Arabic Curriculum Development Design', Arabiyatuna: Arabic Journal, 4.1 (2020), 1 <https://doi.org/10.29240/jba.v4i1.1095>.

talent and interest in learning Al-Qur'an Hadith. For example, in the educational subject of Al-Qur'an Hadith in the legal chapter of Idzhar reading, this reading law must be read clearly and the components of the letters consist of five letters (*hamzah, ha', kho', 'ain, and 'gain*). Students develop it by direct practice applied to reading in the Qur'an, it is not enough to just understand it. Of course with this, the teacher has given the subject matter that has been given.[59]

In the third level of the actual reasoning approach, the students are expected to be able to evaluate and analyze their learning outcomes.[60] The teacher conveys material that is by the students' abilities if the tenth grade is delivered the basic chapter. So that it is hoped that students can minimize and analyze learning material.[61] Actualization of this mind as the center of control in analyzing student teaching materials. Which plays an important role in mastering the parental restraints based on feelings, hearing function, the sense of sight, and language communication.[62] Which is by the material rules of learning the Qur'an Hadith. Just as an example in the educational subject of Al-Qur'an Hadith, the application and concentration of practice focus on reading the Qur'an fluently along with the theory of recitation.[63] Apply it in the laws of the rules of recitation, or those related to learning theories.[64] The following is one of the evaluations of students in monitoring learning outcomes during the Covid-19 period:

---

[59] Students, Interview Learning Al-Qur'an Hadith With Neuroscience Base (Yogyakarta, 2021).

[60] M. Amin Abdullah, 'Dialogue of Religious Reason and Modern Science Amid the Covid-19 Pandemic', Maarif, 15.1 (2020), 11–39 <https://doi.org/10.47651/mrf.v15i1.75>.

[61] Benjamin Ross, 'Transhumanism and Buddhist Philosophy: Two Approaches to Suffering', in The Philosophy of Transhumanism (Emerald Publishing Limited, 2020), 147–66 <https://doi.org/10.1108/978-1-83982-622-120201007>.

[62] Iva Ribero Cota, Daniely Martins dos Santos Ferraz, and Nirvana Ferraz Santos Sampaio, 'A Narratividade ea Instancia Discurisiva "Eu" Em Um Estudo Neurolinguistico Sobre Alzheimer', International Journal Arabic Learning, 1.2 (2018), 1–18.

[63] Desfa et al., "Creative Imagination Base on Neuroscience : A Development and Validation of Teacher ' s Module in Covid-19 Affected Schools."

[64] R. Taufiqurrochman and others, 'Students' Perceptions on Learning Management Systems of Arabic Learning through Blended Learning Model', Al-Bayan Journal: Journal of Arabic Language Education Department, 12.1 (2020), 22–36 <https://doi.org /10.24042/albayan.v12i1.5276>.

Figure 4. Elearning Evaluation of the Value of Al-Qur'an Hadith

Related to the evaluation of the questions and the results of student assignments. This means that it is certain to monitor for students who respond with good talent and interest in learning, as well as for students who have not been encouraged interest and talent in learning the Qur'an Hadith perfectly.[65] The local teacher by evaluating through the role of the actual sense approach applies it as an evaluation of the Al-Qur'an Hadith learning giving a multiple-choice evaluation question of ten questions. Related to the matter of Al-Qur'an Hadith material, it adjusts the chapters that are presented to students. So that student learning at home is directed either when accompanied by students or independently.[66] The teacher in checking it is easier to monitor the results of learning at home. As well parents as teachers have both ways to monitor and see the progress of their children in learning.[67] Apart from that, evaluation in learning also finds certain shortcomings and obstacles. For students who are in a network condition, the internet signal does not support finding irregularities or problems in accessing the internet.[68] It is a natural thing in online learning because the weakness of this learning is also included

---

[65] Mohammad Mohammadipur, 'Relationships Between Strategic Language Learning, Positive Emotions, Language Learning Motivation and English Language Proficiency Among Malysian ESL Undergraduates' (University Putra Malaysia, 2018).

[66] Anurag Tripathi, 'Language & Speech Disorders – It All Starts in the Brain', Science Reporter, 4.9 (2019), 1–10.

[67] Samuel Di Luca and others, 'Finger-Digit Compatibility in Arabic Numeral Processing', Quarterly Journal of Experimental Psychology, 59.9 (2006), 1648–63 <https://doi.org/10.1080/17470210500256839>.

[68] Wahyu Aji Fatma Dewi, 'Impact of COVID-19 on the Implementation of Online Learning in Elementary Schools', Educational: Journal of Educational Sciences, 2.1 (2020), 55–61 <https://doi.org/10.31004/edukatif.v2i1.89> .

in the category of distance learning (online). Learning that starts from home (learning from home).[69] In addition, students are also supported by learning Al-Qur'an Hadith by adjusting the brain and actual mind.[70] So that the mental impact of Covid-19 reduces the burden on students. This means that learning based on the brain and reason approach in students balances or stabilizes the way students learn to remain consistent and learn well.[71]

Finally, the fourth sense is the acquisition sense (creative) with this reasoning approach, students can produce good works. Able to be an outstanding student. It can be said that the learning outcomes are perfect.[72] The sense of this approach serves as a source of strength (strong motivation) to present strengths or ideal learning outcomes. As a result of learning, the tutors measure the results of the mid-semester exams and the results of the end-semester exams. Adjustment to the acquisition sense approach which according to Ibn Sina is called creative reason to produce products (learning outcomes).[73] Teachers play an active role in these results will also be conveyed to students and parents. Based on the results of their study children get a certain value. Teachers also play an important role in encouraging parents so that students continue to study optimally at home. In this case, students produce learning materials related to something logical or theoretical or empirical knowledge, related to the learning of the Qur'an and Hadith.[74] The following is a table of student learning outcomes at the end of semester assessment (PAS):

---

[69] Mohammad H. Al-Khresheh, Ahmad Khaerurrozikin, and Abdul Hafidz Zaid, 'The Efficiency of Using Pictures in Teaching Speaking Skills of Non-Native Arabic Beginner Students', Universal Journal of Educational Research, 8.3 (2020), 872–78 <https http://doi.org/10.13189/ujer.2020.080318>.

[70] Suyadi, Nuryana, and Fauzi, "The Fiqh of Disaster: The Mitigation of Covid-19 in the Perspective of Islamic Education-Neuroscience."

[71] Olga Iljina and others, 'Neurolinguistic and Machine-Learning Perspectives on Direct Speech BCIs for Restoration of Naturalistic Communication', Brain-Computer Interfaces, 4.3 (2017), 186–99 <https://doi.org/10.1080/2326263X.2017.1330611 >.

[72] Fachri Helmanto and Arif Hidayat, 'Character Description: Popular Openings in Arabic Short Stories Describing Charters: Pupular Story Opening in Arabic Short Stories', Tatsqifiy: Arabic Education Journal, 148.1 (2020), 148–62.

[73] Amal Hashem Khalil, Bahaa El-din Elsayed El-nagar, and Michael Abd El-mesih Awad, 'The Effect of Brain-Based Learning on Developing Some Speaking Skills of Egyptian EFL Secondary School Students', International Journal of Environmental & Science Education, 14.3 (2019), 103–16.

[74] Suyadi, Early Childhood Learning Theory in Neuroscience Studies, first (Bandung: Rosdakarya Youth, 2016).

Table 1. List of Final Semester Exam Scores for Learning Al-Qur'an Hadith Class X DPIB

No	Student's name	Class (Department)	Score
1	Aditya Tegar Grandis Prayoga	X DPIB	78
2	Ananda Putra Ayogya	X DPIB	79
3	Annisa Cahiya Negari	X DPIB	80
4	Ardian Ilham Pratama	X DPIB	79
5	Atha Kurnia	X DPIB	80
6	Aura Shakilla	X DPIB	79
7	Deesca nafariel m.	X DPIB	78
8	Denta Rizky Officer	X DPIB	78
9	Deswita Maharani	X DPIB	79
10	Dio Nova Mahendra	X DPIB	80
11	Dito Anggoro Sakti	X DPIB	79
12	Fikri Ikhsan Al Muzakkiy	X DPIB	79
13	Grechia Alfani Syarla	X DPIB	79
14	Husni Abdul Ghony	X DPIB	79
15	Itsna Princess Ramadhani	X DPIB	72
16	Ja'far Rizky Fadhilah	X DPIB	71
17	Jefrino Rico Ferdiansyah	X DPIB	73
18	Jihan Humaira	X DPIB	70
19	Marinto Irlan Saputra	X DPIB	73
20	Muhammad Sidiq Wibowo	X DPIB	72

Based on data from SMK Muhammadiyah 3 Yogyakarta, the table above is the result of student achievement through online exams. It is known by reason that this acquisition is the achievement of product results (student learning work) at SMK Muhammadiyah 3 Yogyakarta. This cannot be separated from the important role of the teacher who directs. From several learning outcomes of Al-Qur'an Hadith, 20 students got scores with good criteria (according to learning assessment standards). As for 5 students who get less than the KKM, follow-up and assistance from the teacher are

needed. Learning Al-Qur'an Hadith requires consistency and discipline in a neuroscience-based learning approach or Ibn Sina's multilevel reasoning concept. This fourth level of intelligence has an impact on parents, knowing their children's learning outcomes.[75]

2. **Implications of Learning Al-Qur'an Hadith Based on Neuroscience and Ibn Sina's Graded Intellect.**

The learning delivered by students at home during the Covid-19 pandemic uses learning videos containing Al-Qur'an Hadith learning materials. The learning video conveys material information in the learning chapter. For example, in the Al-Qur'an Hadith education map, the chapter on the rules of various madrasas in the science of *tajwid* directly informs about related learning videos. With the presentation of the material through power points which the school admin delivered through school e-learning. During the Covid-19 pandemic, directed and targeted learning is needed by the role of the teacher.[76] Learning based on Ibn Sina's multilevel reasoning approach and the basis of a neuroscience approach has a positive influence on students, especially on the individual mentality of students at home.[77]

Based on the current social situation, problems and conflicts also exist. Precisely with good learning, it gives its motivation to students and parents at home.[78] Online learning or online learning is learning based on technological tools used by students in learning, as well as the existence of learning materials delivered by the teacher. According to the government, online learning is very effective learning of conveying messages to students at home.[79] On the one hand, it has a weakness because online learning also doesn't run normally, with internet connection signal constraints or the use of technology.[80] The majority of students also feel confused in terms of the use of technology in accessing learning information from the teacher. The significant impact of

---

[75] Students, Mid-Semester Assessment Results Interview (Yogyakarta, 2021).

[76] Poncojari Wahyono, H. Husamah, and Anton Setia Budi, 'Professional Teachers During the COVID-19 Pandemic: A Review of Online Learning Implementation, Challenges, And Solutions', Journal of Teacher Professional Education, 1.1 (2020), 51–65 <http://ejournal.umm.ac.id/index.php/jppg/article/view/12462>.

[77] Salihin and others.

[78] H Verawati and U Hasanah, 'The Modern Reform of Arabic Learning Paradigm and Its' Contribution toward the Development of Islamic Studies', Al-Lisan: Jurnal Bahasa (e …, 6.1 (2021), 71–84 <http://www .journal.iaingorontalo.ac.id/index.php/al/article/view/1866>.

[79] Hisny Fajrussalam, Koko Adya Winata, Ihin Solihin, "Inovasi Pembelajaran Pesantren Ramadhan Dalam Meningkatkan Kecerdasan Spiritual Peserta Didik Di Masa Pandemi COVID-19."

[80] Nureza Fauziyah, 'The Impact of Covid-19 on the Effectiveness of Islamic Education Online Learning', Al-Mau-Izhoh, 2.2 (2020), 1–11.

Covid-19 in general also has an effect on Islamic education in general. The following is a video of the learning and conditions of students studying online:

Figure: 5. Learning Videos and Al-Qur'an Hadith Materials Online[81]

The online learning video above is an effective means of delivering Al-Qur'an Hadith learning to students at home. Observing the state of the dominant learning activities of independent learning, on the other hand, students remain focused on studying at home. Strive to follow the messages and learning information conveyed by the teacher. The learning of Ibn Sina's multilevel reasoning approach based on neuroscience also plays an important role in the success of students' achievement or targets in learning the Qur'an and Hadith. Creative learning models influence students in terms of reflecting and refreshing students' brains. As well as the support of good and innovative learning videos, students' brains in learning are not saturated.

The function of this approach to reason leads to stimulation of the students' brain in learning. Reducing stress and residual burden of studying at home. So that the learning objectives of the Qur'an Hadith are achieved. The existence of the Covid-19 pandemic provides enlightenment instructions (self-evaluation) for teachers and students in optimizing good learning.[81] And the support of mastery of digital communication technology and the like.[82] Previously, during the Covid-19 outbreak, learning was carried out conventionally, offline learning was met with students. During the pandemic, all learning arrangements in the world of education, both formal and non-formal, have

---

[81] Miftah Syarif and Meimunah S Moenada, 'Boarding School (Pesantren) Education During Covid-19 Pandemic at Dar El Hikmah Pekanbaru Indonesia', Khalifa: Journal of Islamic Education, 4.2 (2020), 161–74.

[82] Hisny Fajrussalam, Koko Adya Winata, Ihin Solihin, "Inovasi Pembelajaran Pesantren Ramadhan Dalam Meningkatkan Kecerdasan Spiritual Peserta Didik Di Masa Pandemi COVID-19."

changed.[83] Therefore, Ibn Sina's multilevel reasoning approach based on neuroscience is an alternative to learning during the Covid-19 pandemic. Reducing the stress of the student's learning load and optimizing the psychological mentality of students to remain consistent in learning at home, with family. Thus learning goes well and normally.
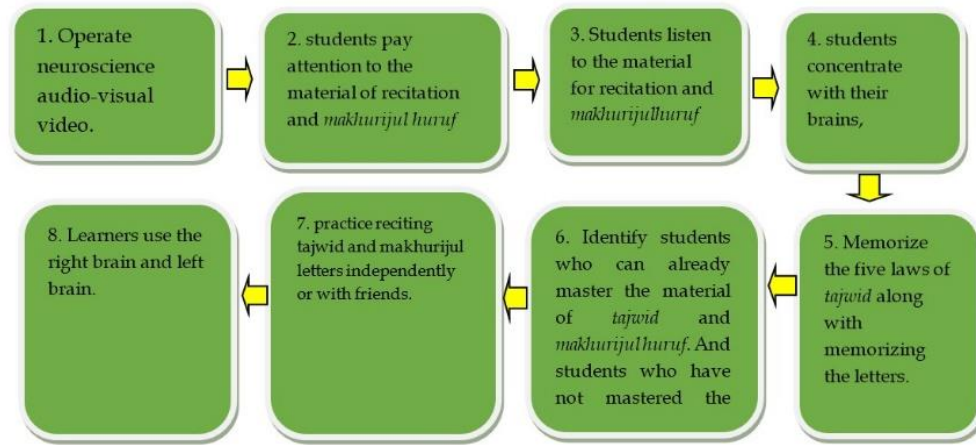

Figure 6. Steps*videos* Neuroscience-Based Al-Qur'an Hadith learning.

3. Step-by-step Video Learning of the Qur'an Hadith Based on Neuroscience

The steps in the neuroscience-based learning video of the Qur'an Hadith are as follows:

a. Students operate audio-visual videos that have been given (shared) by the teacher.

b. Students pay attention to the material presented by the teacher in the learning media

c. Students listen to recitation law material and practice reading law

d. Learners concentrate on the brain and respond with the language that will be spoken

e. Students memorize the 5 laws of recitation and recite each of the letters makhurijul

f. The teacher identifies students who have not been able to read and students who have been able to read the Qur'an or readings related to the science of recitation and the law of reading.

g. Finally, students practice tajwid and makhurijul letters correctly and tartil both independently and with friends

---

[83] Hisny Fajrussalam, Koko Adya Winata, Ihin Solihin.

h. Utilizing the right-brain and left-brain approaches of students in understanding the material of recitation and makhurijul letters. With a focus on brain intelligence centered on the prefrontal cortex as a stimulus for emotional, affective, cognitive, and psychomotor intelligence.

Thus learning Al-Qur'an Hadith goes by itself with students learning. Even though at this time the Covid-19 pandemic, learning videos can be operated and studied at each student's home. To receive material and practice questions given by the teacher.

D. Conclusion

Based on the results of the research and discussion above, the researcher concludes, it turns out that Ibn Sina's multilevel reasoning approach based on neuroscience in learning Al-Qur'an Hadith can understand students in learning Al-Qur'an Hadith subjects. Both theoretically (theories related to the science of recitation) and empirical (related to the legal practice of reading recitation and makhurijul letters). Ibn Sina's multilevel reasoning approach which consists of material sense, talent sense, actual reason, and acquisition sense, affects students. The main components of learning, namely understanding with a good memory, developing talents so that curiosity arises in continuing to learn, analyzing and evaluating problems (evaluation) correctly, and producing work products with maximum learning outcomes.

The Covid-19 pandemic is not a barrier or an excuse for not studying students at home, even though not through conventional learning. On the contrary, during the Covid-19 pandemic, students remained consistent and stable in learning to receive lessons from teachers at home. As the description of the research results in SMK Muhammadiyah 3 Yogyakarta, students remained stable and committed to learning accompanied by their parents at home. Although there are some obstacles due to the impact of the Covid-19 pandemic, students have difficulty in accessing information due to the difficulty of signaling. The world of education needs to remain creative and innovative, especially educators, in developing Ibn Sina's multilevel reasoning-based learning and Neuroscience.

Of course, the researcher realizes that this research has shortcomings and limitations in the content and substance of the study, just as an example, the researcher has not comprehensively analyzed the substance of learning the Qur'an and Hadith as a whole. Or related to reviews in the field of neuroscience and Ibn Sina's concept of multilevel reasoning, valid research data. Therefore, researchers provide suggestions and recommendations to academics, researchers, communities, educational institutions, and teachers to continue research that is relevant in the field of research on learning Al-Qur'an Hadith, just an example of the field of Al-Qur'an Hadith based on brain-based learning, or Al-Qur'an Hadith learning is based on the Qur'an, which has implications for the development of Al-Qur'an Hadith learning today.

BIBLIOGRAPHY

Abadzi, Helen. "How to Speed up Arabic Literacy for Lower-Income Students? Some Insights from Cognitive Neuroscience." *How to Speed up Arabic Literacy for Lower-Income Students?* 1, no. 9 (2012): 1–23. https://doi.org/10.1596/26823.

Abdullah, M. Amin. "Mendialogkan Nalar Agama dan Sains Modern di Tengah Pandemi Covid-19." *Maarif* 15, no. 1 (2020): 11–39. https://doi.org/10.47651/mrf.v15i1.75.

Adib Rifqi Setiawan. "Scientific Literacy Worksheets for Distance Learning in the Topic of Coronavirus 2019 (COVID-19)." *Reading Academy* 2, no. 1 (2020): 1–9.

Admin Sekolah. "Elering SMK Muhammadiyah 3 Yogyakarta: Vedeo Pembelajran dan Dokumentasi Belajar Siswa." Online Learning, 2021. https://cs.smkmuh3-yog.sch.id/mod/quiz/report.php?id=820&mode=overview.

Akerele, Tosin. "Embodied Conceptualisation in Yorùbá : Evidence From Spatial." *Journal of West African Language* 1, no. 2 (2021): 40–16.

Akkurt, Ibrahim Onnur. "Neurolinguistics: A Spectrum of Research Neurolinguistik: Bir Arastirma Spektrumu." *Turkish Journal of Educational Research* 2, no. 1 (2021): 24–27. https://doi.org/10.51242/saka-tjer.2021.10.

Al-Khresheh, Mohammad H., Ahmad Khaerurrozikin, and Abdul Hafidz Zaid. "The Efficiency of Using Pictures in Teaching Speaking Skills of Non-Native Arabic Beginner Students." *Universal Journal of Educational Research* 8, no. 3 (2020): 872–78. https://doi.org/10.13189/ujer.2020.080318.

Ali Arifin, Muhammad Habibulloh. "Efektivitas Model Pembelajaran Kooperatif STAD Menggunakan Alat Peraga Alquran untuk Meningkatkan Penguasaan Tajwid." *J-PAI: Jurnal Pendidikan Agama Islam*, 2019, 189–202.

Anwar, Syamsul. "Developing a Philosophy of Scientific Advancement in Muhammadiyah Higher Education Institutions Based on Al-Islam and Kemuhammadiyahan (AIK) Principles." *Afkaruna: Indonesian Interdisciplinary Journal of Islamic Studies* 17, no. 1 (2021). https://doi.org/10.18196/afkaruna.v17i1.9017.

Apri, Wulandari, and Suyadi. "Pengembangan Emosi Positif dalam Pendikan Islam Perspektif Neurosains." *Tadrib* 5, no. 1 (2019): 51–67.

Bagus, Cah. "Al-Qur'an, Tentang Kedudukan Akal dan Olah Fikir." *Alqur'an Dan Sains*, 2011. http://gusmendem-dua.blogspot.com/2011/10/al-quran-tentang-kedudukan-akal-dan.html.

Balogun, Adeyemi. "Religion and Prejudice: Perspectives on the Tablighi Jama'at in Ede, Southwest Nigeria." *International Journal Islamic Studies* 1, no. 2 (2021): 1–15.

Beatty-Martínez, Anne L., and Paola E. Dussias. "Revisiting Masculine and Feminine Grammatical Gender in Spanish: Linguistic, Psycholinguistic, and Neurolinguistic Evidence." *Frontiers in Psychology* 10, no. 5 (2019): 1–17. https://doi.org/10.3389/fpsyg.2019.00751.

Bensaid, Benaouda, Salah Ben Tahar Machouche, and Mustafa Tekke. "An Islamic Spiritual Alternative to Addiction Treatment and Recovery." *Al-Jami'ah* 69, no. 1 (2021): 127–62. https://doi.org/10.14421/ajis.2021.591.127-162.

Cahya Edi Setyawan, Muhamad Fathoni. "Desain Konsep Pembelajaran Bahasa Arab dengan Model Quantum Teaching." *Al-Ta'rib Jurnal Bahasa Arab Dan Kebahasa Araban* 6, no. 1 (2018): 60–79.

Cota, Iva Ribero, Daniely Martins dos Santos Ferraz, and Nirvana Ferraz Santos Sampaio. "A Narratividade e a Instancia Discurisiva 'Eu' Em Um Estudo Neurolinguistico Sobre Alzheimer." *Internasioanal Journal Arabic Learning* 1, no. 2 (2018): 1–18.

Desfa, Yusmaliana, Suyadi, Widodo Hendro, and Suryadin Asyraf. "Creative Imagination Base on Neuroscience : A Development and Validation of Teacher 's Module in Covid-19 Affected Schools." *Universal Journal of Educational Research* 8, no. 1 (2020): 5849–58. https://doi.org/10.13189/ujer.2020.082218.

Didik, Peserta. "Interview Implementasi Penggunaan Media Pembelajaran Berbasis Neurosains." Yogyakarta, 2021.

Fathurrosyid. "Nalar Moderasi Tafsir Gus Baha'; Studi Kontestasi Pengajian Tafsir Al-Qur'an di Youtube." *SUHUF: Jurnal Pengkajian Al-Qur'an dan Budaya* 13, No. 1 (2020): 77–101. https://jurnalsuhuf.online/suhuf/article/view/528/206.

Fauzi Muhammad Ilfan. "Pemanfaan Neurosains dalam Desain Pengembangan Kurikulum Bahasa Arab." *Arabiyatuna : Jurnal Bahasa Arab* 4, no. 1 (2020): 1. https://doi.org/10.29240/jba.v4i1.1095.

Fauziyah, Nureza. "Dampak Covid-19 Terhadap Efektivitas Pembelajaran Daring Pendidikan Islam." *Al-Mau-Izhoh* 2, no. 2 (2020): 1–11.

Febriandi, Yogi, and Yaser Amri. "Stuck In Sharia Space The Experiences of Christian Students in Langsa, Aceh." *Al-Jami'ah* 59, no. 1 (2021): 33–56. https://doi.org/10.14421/ajis.2021.591.33-56.

Ferretti, Todd R., Albert N. Katz, Christopher A. Schwint, Courtney Patterson, and Dagna Pradzynski. "How Discourse Constraints Influence Neurolinguistic Mechanisms during the Comprehension of Proverbs." *Cognitive, Affective and Behavioral Neuroscience* 20, no. 3 (2020): 604–23. https://doi.org/10.3758/s13415-020-00790-9.

Hasyim, Abdul Wahid. "Al-Tariqah Al-Naqshabandiyah Al-Khalidiyah Fi Cianjur, Jawa Al-Gharbiyah: Ta'alimuha Wa Tuqsuha Wa Tatawwuratuha." *Studi Islamika* 27, no. 2 (2020): 1–56.

Helmanto, Fachri, and Arif Hidayat. "Deskripsi Karakter: Pemubukaan Populer dalam Cerita Pendek Bahasa Arab Describing Charters: Pupular Story Opening in Arabic Short Stories." *Tatsqifiy: Jurnal Pendidikan Bahasa Arab* 148, no. 1 (2020): 148–62.

Hidayah, Siti Nur. "Pesantren For Middle-Class Muslims in Indonesia (Between Religious Commodification and Pious Neoliberalisme." *Qudus Internasional of Islamic Stuies (QIJIS)* 9, no. 1 (2021): 209–44.

Hisny Fajrussalam, Koko Adya Winata, Ihin Solihin, Qiqi Yuliati Zaqiah. "Inovasi Pembelajaran Pesantren Ramadhan Dalam Meningkatkan Kecerdasan Spiritual Peserta Didik Di Masa Pandemi COVID-19." *EduTeach : Jurnal Edukasi Dan Teknologi Pembelajaran* 1, no. 2 (2020): 1–10. https://doi.org/10.37859/eduteach.v1i2.1949.

Iljina, Olga, Johanna Derix, Robin Tibor Schirrmeister, Andreas Schulze-Bonhage, Peter Auer, Ad Aertsen, and Tonio Ball. "Neurolinguistic and Machine-Learning Perspectives on Direct Speech BCIs for Restoration of Naturalistic

Communication." *Brain-Computer Interfaces* 4, no. 3 (2017): 186–99. https://doi.org/10.1080/2326263X.2017.1330611.

Jailani, Mohammad, Suyadi, and Betty Mauli Rosa Bustam. "The First HISPISI ' s International Conference on Humanities , Education , Law , and Social Sciences ' New Findings during Pandemic in Social Science , Humanities , Education and Law .'" In *Neuroscience Based Islamic Learning a Critique of the Holistic Education Crisis in Pamekasan Madura*, edited by Professor James A. Banks, Professor Ian Davies, Professor Ying Huei Chen, Professor Zakiyuddin Baidhawy, Associate Professor Bulent Tarman, and Associate Professor Dr. Zulhamri Abdullah, 123–34. Jakarta: Universitas Negeri Jakarta, 2021.

Jailani, Mohammad, Suyadi, and Dedi Djubaedi. "Menelusuri Jejak Otak dan 'Aql dalam Al-Qur'an Perspektif Neurosains dan Pendidikan Islam di Era Pandemi COVID-19." *Tadris: Jurnal Pendidikan Islam* 16, no. 1 (2021): 1–19. https://doi.org/10.19105/tjpi.v16i1.4347.

Jailani, Mohammad, Suyadi Suyadi, and Muallimah Muallimah. "Pengembangan Pembelajaran Alquran Hadis dengan Pendekatan Akal Bertingkat Ibnu Sina di SMK Muhammadiyah 3 Yogyakarta Berbasis Neurosains di Masa Pandemi Covid-19. " *SALAM: Jurnal Sosial Dan Budaya Syar-I* 8, no. 4 (2021): 1051–66. https://doi.org/10.15408/sjsbs.v8i4.18995.

Jailani, Mohammad, Wantini, Suyadi, and Betty Mauli Rosa Bustam. "Meneguhkan Pendekatan Neurolinguistik dalam Pembelajaran : Studi Kasus pada Pembelajaran Bahasa Arab Madrasah Aliyah." *Al-Thariqah Jurnal Pendidikan Islam* 6, no. 1 (2021): 152–67.

Kasno, Suyadi. "'Aql dan Otak dalam Kajian Neurosains dan Implikasinya Pendekatan Saintifik dalam Pendidikan Islam." *Muaddib: Studi Kependidikan dan Keislaman* 1, no. 2 (2019): 154–77.

Khalil, Amal Hashem, Bahaa El-din Elsayed El-nagar, and Michael Abd El-mesih Awad. "The Effect of Brain-Based Learning on Developing Some Speaking Skills of Egyptian EFL Secondary School Students." *International Journal of Environmental & Science Education* 14, no. 3 (2019): 103–16.

Kharisma Noor Latifatul Mahmudah, Suyadi. "Akal Bertingkat Ibnu Sina dan Taksonomi Bloom dalam Pendidikan Islam Perspektif Neurosains." *Edukasi Islamika: Jurnal Pendidikan Islam* 5, No. 1 (2020): 121–38.

Lau, Yoke Lian, Chek Kim Loi, and Mohd Nor. "The Historical Development of The Study of Broca's Aphasia." *Malang Neurology Journal* 7, No. 2 (2021): 125–28. https://doi.org/10.21776/ub.mnj.2020.007.02.8.

Luca, Samuel Di, Alessia Granà, Carlo Semenza, Xavier Seron, and Mauro Pesenti. "Finger-Digit Compatibility in Arabic Numeral Processing." *Quarterly Journal of Experimental Psychology* 59, no. 9 (2006): 1648–63. https://doi.org/10.1080/17470210500256839.

Maksudin. *Metodologi Pengembangan Berpikir Integratif Pendekatan Dialektik*. Yogyakarta: Pustaka Pelajar, 2016.

Mayberry, Rachel I., Tristan Davenport, Austin Roth, and Eric Halgren. "Neurolinguistic Processing When the Brain Matures Without Language." *Brain Maturation Without Lanaguage* 1, no. 4 (2017): 1–15.

Mohammadipur, Mohammad. "Relationships Between Language Learning Strategis, Positive Emotions, Language Learning Motivation and English Language Proficiency Among Malysian ESL Undergraguates." University Putra Malaysia, 2018.

Morrow, Susan L. "Qualitative Research in Counseling Psychology: Conceptual Foundations." *The Counseling Psychologist* 35, no. 2 (2007): 209–35.

Nabi. "The Impact of Entrepreneurship Education in Higher Education: A Systematic Review and Research Agenda." *Academy of Management Learning & Education* 16, no. 2 (2017): 277–99.

Pesenti, Mauro, Marc Thioux, Xavier Seron, and Anne De Volder. "Neuroanatomical Substrates of Arabic Number Processing, Numerical Comparison and Simple Addition: A PET Study." *Journal of Cognitive Neuroscience* 12, no. 4 (2021): 461–79. https://doi.org/10.1016/s1053-8119(18)31064-4.

Peserta didik. "Interview Tentang Pembelajaran Berbasis Neurosains Dalam Pembelajaran Pendidikan Islam." Yogyakarta, 2021.

Peserta Didik. "Dokumentasi Kegiatan Pembelajaran Berbasis Neurosains Secara Online." Yogyakarta, 2021.

Ross, Benjamin. "Transhumanism and Buddhist Philosophy: Two Approaches to Suffering." In *The Philosophy of Transhumanism*, 147–66. Emerald Publishing Limited, 2020. https://doi.org/10.1108/978-1-83982-622-120201007.

Saihu, Saihu. "Konsep Pembaharuan Pendidikan Islam Menurut Fazlurrahman." *Andragogi: Jurnal Pendidikan Islam Dan Manajemen Pendidikan Islam* 2, no. 1 (2020): 82–95.

Sarah L. Weinberger-Litman. "A Look at the First Quarantined Community in the USA: Response of Religious Communal Organizations and Implications for Public Health During the COVID-19 Pandemic." *Journal of Religion and Health*, 2020, 1–14.

Shalihin, Rahmat Ryadhush, Suyadi, Desfa Yusmaliana, and Diyan Faturahman. "Rational Brain Transmutation Into Intuitive Brain Based on Neuroscience in Islamic Education." In *Rational Brain Transmutation Into Intuitive Brain Based on Neuroscience in Islamic Education*, 1–10. Bukittinggi, Indonesia: BICED, IAIN Bukittinggi, 2021. https://doi.org/10.4108/eai.14-9-2020.2305691.

Siswa. "Interview Pembelajaran Al-Qur'an Hadits dengan Basis Neurosains." Yogyakarta, 2021.

Sugiyono. *Metode Penelitian Kuantitatif Kualitatif dan R&D*. 1st ed. Bandung: Alfabeta, 2017.

Suyadi. "Pendidikan Islam dan Neurosains." In *Asosiasi Program Pascasarjana Perguruan Tinggi MUhammadiyah 'Aisyiyah (APPPTMA)*, 8–9. Sulawesi Selatan: KNAPPPTMA KE-6, 2017.

———. *Teori Pembelajaran Anak Usia Dini Dalam Kajian Neurosains*. Pertama. Bandung: Remaja Rosdakarya, 2016.

Suyadi, Zalik Nuryana, and Niki Alma Febriana Fauzi. "The Fiqh of Disaster: The Mitigation of Covid-19 in the Perspective of Islamic Education-Neuroscience." *International Journal of Disaster Risk Reduction* 51, no. 2 (2020): 101848. https://doi.org/10.1016/j.ijdrr.2020.101848.

Suyadi, and Sutrisno. "A Genealogycal Study of Islamic Education Science at the Faculty of Ilmu Tarbiyah dan Keguruan UIN Sunan Kalijaga." *Al-Jami'ah* 56, no. 1 (2018): 29–58. https://doi.org/10.14421/ajis.2018.561.29-58.

Suyadi, and Hendro Widodo. "Millennialization of Islamic Education Based on Neuroscience in The Third Generation University in Yogyakarta Indonesia." *QIJIS: Qudus International Journal of Islamic Studies* 7, no. 1 (2019): 173–202. https://doi.org/DOI : 10.21043/qijis.v7i1.4922.

Syarif, Miftah, and Meimunah S Moenada. "Boarding School (Pesantren) Education During Covid-19 Pandemic at Dar El Hikmah Pekanbaru Indonesia." *Khalifa: Journal of Islamic Education* 4, no. 2 (2020): 161–74.

Tatang Hidayat, Syahidin. "Inovasi Pembelajaran Pendidikan Agama Islam Melalui Model *Contextual Teacihing and Learning* dalam Meningkatkan Taraf Berfikir Peserta Didik." *Jurnal Pendidikan Agama Islam* XVI, no. 2 (2019): 115–36.

Taufik Pasiak. *Brain Based Learning Merupakan Teknik-Teknik Pembelajaran yang Mengacu Pada Kerja Otak dengan Mengelola Gaya Belajar, Mengolah Informasi, Pola Respon dan Penggunaan Imajinasi*. Bandung: PT Mizan Pustak, 2012.

Taufiqurrochman, R., Imam Muslimin, Imam Rofiki, and Joshua Abah ABAH. "Students' Perceptions on Learning Management Systems of Arabic Learning through Blended Learning Model." *Jurnal Al-Bayan: Jurnal Jurusan Pendidikan Bahasa Arab* 12, no. 1 (2020): 22–36. https://doi.org/10.24042/albayan.v12i1.5276.

Tripathi, Anurag. "Language & Speech Disorders – It All Starts in the Brain." *Science Reporter* 4, no. 9 (2019): 1–10.

Verawati, H, and U Hasanah. "The Modern Reform of Arabic Learning Paradigm and Its' Contribution toward the Development of Islamic Studies." *Al-Lisan: Jurnal Bahasa (e ...* 6, no. 1 (2021): 71–84. http://www.journal.iaingorontalo.ac.id/index.php/al/article/view/1866.

Vogel, Stephan E., Celia Goffin, and Daniel Ansari. "Developmental Specialization of the Left Parietal Cortex for the Semantic Representation of Arabic Numerals: An FMR-Adaptation Study." *Developmental Cognitive Neuroscience* 12, no. 1 (2015): 61–73. https://doi.org/10.1016/j.dcn.2014.12.001.

Waharjani, Waharjani. "Children's Faith Education In an Interfaith Marriage Family (A Case Study of Moslem and Catholic Couples in the Special Region of Yogyakarta)." In *INTERNATIONAL SEMINAR ON EDUCATION*, 679–91, 2020.

Wahyono, Poncojari, H. Husamah, and Anton Setia Budi. "Guru Profesional di Masa Pandemi COVID-19: Review Implementasi, Tantangan, dan Solusi Pembelajaran Daring." *Jurnal Pendidikan Profesi Guru* 1, no. 1 (2020): 51–65. http://ejournal.umm.ac.id/index.php/jppg/article/view/12462.

Wahyu Aji Fatma Dewi. "Dampak COVID-19 terhadap Implementasi Pembelajaran Daring di Sekolah Dasar." *Edukatif : Jurnal Ilmu Pendidikan* 2, no. 1 (2020): 55–61. https://doi.org/10.31004/edukatif.v2i1.89.

Widianti. "Implementasi Pendidikan Agama Islam dalam Membangun Nilai-Nilai Religius pada Peserta Didik SMP Muhammadiyah 3 Metro." Program Pascasarjana Universitas Islam Negeri Raden Intan Lampung, 2019.

Widodo, Hendro. "The Role of School Culture in Holistic Education Development in Muhammadiyah Elementary School Sleman Yogyakarta." *Dinamika Ilmu* 19, no. 2 (2019): 265–85. https://doi.org/10.21093/di.v19i2.1742.

Widodo, Hendro, Sutrisno Sutrisno, and Farida Hanum. "The Urgency of Holistic Education in Muhammadiyah Schools." *Al-Ta Lim Journal* 26, no. 2 (2019): 160–74. https://doi.org/10.15548/jt.v26i2.549.

Widodo, Heru Widi. "Tafsir Ayat-Ayat Neurosains dan Ayat-Ayat Berakhiran Afalaa Ta'qilun." *Jurnal MUDARRISUNA: Media Kajian Pendidikan Agama Islam* 9, no. 1 (2019): 234–48.

Wulandari, Apri, and Suyadi. "Pengembangan Emosi Positif dalam Pendidikan Islam Perspektif Neurosains." *Tadrib Pendidikan Islam* 5, no. 1 (2019): 51–67.

Yusuf, Muhammad. "Strategi pembelajaran guru Pendidikan Agama Islam dalam meeningkatkan akhlakul karimah peserta didik di SMA Bosowa Internasional School Makassar." UIN Alauddin Makassar, 2016.