

Some Ethnomathematics Interpretations about the Practice of Dhikr Jahar of Tariqa Qodiriyah Naqsyabandiyah Ma'had Suryalaya

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Abstract. The existence of mathematics as science is not only owned by pure-science but more philosophically used by humans as a way of thinking to solve real problems that are simpler. This form of mathematical use has emerged in many cultural and religious practices. One of them is the Sufi Order of the *Tariqa Qodiriyah Naqshabandiyah* (TQN) that teaches Dhikr Jahar using mathematical (concept of) numbers with special methods as provisions taught by the Murshid (shaykh/great teacher). The aim of this phenomenological research is to reveal how the followers of the TQN interpret their experienced spiritual phenomena through the practice of Dhikr Jahar based on two points of view, namely rational and empirical. This research used a qualitative approach with a phenomenological method. Interviews has been conducted to the followers of TQN by using the convenience sampling method and validated by the interview to the Murshid. The research used filed observation technique of ethnographic (boarding) in the Pesantren Sinarasa-Suryalaya which is estimated for six months. The result shows that the practitioners of this Dhikr Jahar have various rational interpretations and empirical experiences of each in interpreting Dhikr Jahar. Based on the spiritual experiences of practitioners, they believe that Dhikr is part of a form of life solving problems. A more scientific explanation of the phenomenological description experienced by respondents will be bravely explained through mathematical modelling and the theories of semiotics in this paper.

1. Introduction

History of the development of Islam is able to prove that Islam provides the greatest contribution to civilization and science, especially in science and mathematics. Some of them such as Ibn Haitam with his discoveries in optical physics, Abdus Salam with his discoveries in electrical physics, Ibn Sina in the medical field, Ibn Khaldun who was known as the originator of the science of sociology, Ibn Battuta who managed to explore the world, and Al Zajari, known as Si. Mr. Robot has been enough proof that Islam has mastered the science and social science [1]. In the field of mathematics there were also many Muslim mathematicians such as Ali ibn Abi Talib who had introduced the context of numbers in the phenomenon of perennials and had also mastered the concept of the least common multiple (GCD) at



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that time, Al Khawarizmi who made the biggest contribution in algebra, Abu al-Wafa who introduced the the concept of tangent, cotangent, secant, and cosecant in trigonometry [2], in mathematical calculations, astronomy is also known by Al Battani with his contribution to determine the length of the sun year (Syamsiyah) and Al Biruni who has sparked the theory of earth's rotation and is also known as the first person to trigger the size of the radius of the earth [3].

The thoughts and findings of Muslim scientists in science and mathematics prove the absence of a dichotomy between religion and science. Masood argued “*perhaps paradoxically, it was the needs of religion that in some ways helped to advance new knowledge.....science and Islam have described the scientific revolution (p.xiv)* [4], while mathematics acts as the rules of rationality in seeking the truth of God which in Islamic perspective is believed not to be in conflict with the teachings of monotheism [2], [5]. This can be explained through the positive relations of the phenomenology of the Koran with various types of the rationality of knowledge and phenomenology experienced by all humans. Although empirical evidence, in this case, may not always be satisfying to everyone based on scientific methods. Nevertheless, truth in the view of philosophy does not have to fulfill empirical rules [6]. It is this variety of perspectives that makes mathematical philosophy always interesting to discuss and always open to research.

Specific studies about mathematics in Islam in great detail have been carried out such as about how the Quran relates and mathematics [7]–[9], the verbs regression model in the Quran [10], even to the efforts of proving the guidance of the Koran about the State of Saba the kingdom of the Sulaeman prophet [11], [12]. Investigations in these studies use the literature and hermeneutic study methods which are then analyzed based on the researchers' rationality. This investigation is interesting because it provides empirical evidence that is considered fitting to be proof of the truth of the arguments written by the Quran. At least the research reports above are able to contribute to Muslims or the wider community in the process of recognizing God's truth. But in this case, the authors see another phenomenon that contains the value of pragmatism which is more contrasting in the context of human life going forward where mathematics is used very tightly in dhikr on one of the teachings of Sufism in Islam as part of efforts to solve problems.

There are many references that explain how Sufis through the teachings of Sufism apply a very large amount of dhikr with special methods [13]–[19]. Not a few of their practices are questioned and received criticism from some other Muslim communities [20]. A small number who questioned the practice of this Tariqa included the method of remembrance that they used was considered incompatible with the Shari'a by some people (such as the number of dhikr and its methods) and a large portion paid attention to the mystical impression of Islam that their leaders tended to use toward politics [21]–[24]. But on the other hand, it seems that Sufis are able to explain logical arguments and parables rather than their practice [16], [25], [26]. In addition, there is also plenty of evidence and research reports on the positive impact of the teachings of the Tariqa on the lives of followers [27]–[32]. This gap attracts the attention of the writer to make deeper observations on how this phenomenon can be explained through a new approach through ethnomatematics.

The author focuses on the practice of dhikr in one of the most congregational teachings in Indonesia today, namely the Qodiriyah Naqsyabandiyah Ma'had Suryalaya order. Sufi scholars as well as murshid teachers of the Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya, Sheikh Ahmad Shohibulwafa Tajul 'Arifin in the book Uquudul Jumaan [25] teaches that the number of remembrance of Thoyibah (لَا إِلَهَ إِلَّا اللَّهُ) is read: Laa ilaaha illallah) is read after every prayer with provisions not less than 165 times, more is better and ends with odd numbers. If you are busy it can be read three times but it must be replaced (qodho) in your spare time, and read aloud so that it is expected to ‘destroy’ hardness of heart [25]. There is an interesting thing in this phenomenon, namely how to read it is done with a special movement that leads to human ratification and mathematically the number of remembrances written as $\{n \geq 165 \mid n \text{ adalah bilangan ganjil}\}$ or $\{n \geq 165 \mid n = 2k + 1, \forall k \in N\}$.

There are at least two mathematical questions that are very possible to be asked about these zikr numbers, namely why the numbers that are used as benchmarks must be 165 and why they should be odd numbers. Regarding why there must be odd numbers, there have been many explanations that

explain some of the features of odd numbers in the Koran [33]–[35]. In some hadiths too, as narrated by Bukhari and Muslim also Tirmidhi explained that Allah likes the odd [36], [37]. But information about why the teachings of the Qoodiriyyah Naqsyabandiyyah Tariqa using the number 165 from several books or journals are very difficult to find.

Surely an idea could be put forward by anyone that 'surely 165 is special'. There are many mathematical phenomena that can be explored from number 165 in the context of remembrance that might be connected and at the same time as a reason why number 165 is very special. This investigation can be done through the study of an epistemology of knowledge in the philosophy of science [38]. There are many methods of investigation that can be done to find the origin of this knowledge, including the writer using a literary/propositional approach, in-depth interviews, and phenomenological studies of the practice of this remembrance. Apart from these efforts, an important thing that should not be missed is conducting axiological studies of this phenomenon of remembrance. It will be interesting to investigate the effect of mathematical numbers on the dhikr on the change in the life of the practitioner. Although the epistemological aspects of religion and science are different [39], the author believes that science and religion have the same task in the axiological aspect. Both are present as instruments to create a better life, more operational they are present to solve problems.

Based on the description above, the authors view this study included in the study of mathematics on the phenomenon of remembrance or more broadly the religious domain. Collingwood explained that religion is placed as part of the culture in research [40]. The author refers to Collingwood because Sufism is an exclusive form of teaching in Islam. Therefore, the authors chose the ethnomathematics approach as carried by D'Ambrosio [41]–[43], namely the investigation of mathematics in the realm of culture. Ethnomathematics is a mathematical investigation in the realm of ethnography [44].

The ethnographic framework chosen by the author refers to Rosa [45] that ethnomathematics is an intersection of three fields namely mathematics, mathematical modeling, and cultural anthropology.

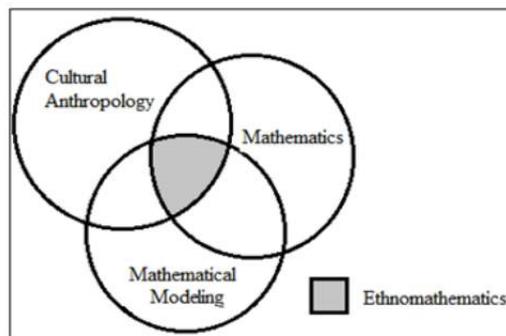


Figure 1. Ethnomathematics as an intersection of three research fields

Source: Rosa (2000)

The practice of dhikr tariqa Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya is very clear using mathematics as zikr numbers. From the phenomenon, the writer describes good mathematical modeling to describe the ontology of the phenomenon and explain the epistemology of the phenomenon of remembrance based on the principle of philosophical rationality. From the aspect of cultural anthropology, the authors point out a novelty of analysis in ethnomathematics which is not widely used by other ethnomathematics in Indonesia [46], [47]. To explain this phenomenon of remembrance, the writer uses Pierce's semiotic theory [48], [49] with the following framework

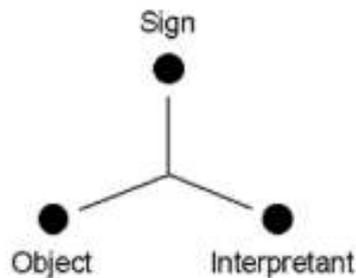


Figure 2. The sign in its triadic relation to object and interpretant (Semiotic Peirce)
Source: Peirce (1998)

Semiotics is the science or method of analysis to study the sign, while the sign itself is something that for someone means something else [50]. In other words, it is possible for people with different signs to have different meanings. This means that there are limits to the scope of the community who understand the meaning of a sign. The Z sign for mathematicians might be understood to symbolize a set of integers so that one can construct meaningful or philosophical meaning from the sign, but for non-mathematicians, this sign does not contain any connotation. Likewise with the meaning of the number 165, for the Qoodiriyyah Naqsyabandiyyah brother, Ma'had Suryalaya, the number 165 represents the object of jahar dhikr. The question is how the meaning of the sign was built by the brothers who were studying dhikr to be more philosophical so that they understood the real meaning in practicing the concept of worship.

The application of semiotics in research in mathematics education is not popular in Indonesia. Initially, semiotics is more widely used in the discipline of linguistics and communication [51]–[56]. But Ernest explained that mathematics is also closely related to semiotics, ranging from alphanumeric, diagrams or pictures, and special symbols such as the sign \rightarrow , \subseteq , ∞ , \sum and many other signs that are popularly accepted by everyone who contains the same meaning for everyone [57]. In fact, there have been many studies in mathematics education abroad that study semiotics [48], [57]–[74].

Based on this framework, the authors conducted an analysis of the phenomenon of dhikr jahar Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya. The sign implied by the method of dhikr jahar Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya must represent a real object in the life of his guardian. Every sign is always related to the object so that we can explore its meaning [47]. This meaning will be explained by the author in this article.

2. Method

The research aims to conduct an in-depth investigation of a cultural phenomenon of a group of Muslim societies who practice the Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya teachings. Therefore the writer uses a qualitative approach [75] with ethnographic methods. Because what the writer is doing is a mathematical study of a group of people, the writer refers to an ethnomathematics method proposed by D'Ambrosio [41]–[43]. The locus of the research was the Sirnarasi Qoodiriyyah Naqsyabandiyyah Islamic Boarding School Ma'had Suryalaya Panjalu, West Java, with 38 respondents. The technique of selecting respondents is done by means of sampling convenience and purposive sampling [76]. While the technique of observation and data analysis the author uses phenomenological studies to obtain subjective meaning rather than the phenomena experienced by respondents [77]–[80]. The author conducted in-depth interviews with respondents, collected various meanings construction from each respondent and conducted ethical comparisons with other literature.

There are two types of dhikr in the teachings of the Sufi order of the Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya, namely dhikr jahar and zikr-khofi. The author gives a few limitations in this research that only focuses on jahar dhikr even though in the discussion the writer is inseparable to discuss a little dhikr khofi.

3. Result and Discussion

There are two types of dhikr in the Qoodiriyyah Naqshbandiyyah tariqa, namely jahar dhikr or ones that are read aloud and khofi dhikr that may not be spoken verbally but only read by the heart. These two sentences of remembrance must be condemned through the murshid teacher [81]. Syekh Ahmad Shohibulwafa Tajul' Arifin in kitab Uquudul Jumaan [25] explained the number (minimum) of reading Thoyibah (لا إِلَهَ إِلَّا اللَّهُ read: *laa ilaaha illallah*) read after each prayer with the condition must not be less than 165 times, more is better and ends with an odd number. Mathematically the number of dhikrs is written as $\{n \geq 165 \mid n \text{ adalah bilangan ganjil}\}$ or $\{n \geq 165 \mid n = 2k + 1, \forall k \in N\}$. If you are busy, you may read it three times, but it must be replaced (qodho) in your spare time.

Odd is a special number in Islam. This is based on an authentic hadith

وَهُوَ وَتَرٌّ يُحِبُّ الْوَتْرَ

“Truly He (Allah ﷻ) is with (odd) and likes odd”
(HR. Al Bukhari No. 6410, Muslim No. 2677) [82], [83]

The above information is not enough to explain the epistemology of the number 165. One of the best efforts to answer this is by asking the Shaykh Mursyid lineage of the Qoodiriyyah Naqsyabandiyyah order, Sheikh Ahmad Khatib Syambas, but this effort is too late to do so. The Book of Miftahus Shudur [81] by Abah Anom explained the method of dhikr jahar but did not explain the basis for selecting the number 165. The author conducted a study and solemn scientific survivors for 6 months in the boarding school Sirnarasa Panjalu. On one occasion, the Shaykh Murshid of the Qoodiriyyah Naqshbandiyyah of the 38th lineage, Shaykh Muhammad Abdul Gaos Syaefulloh Maslul (Abah Aos) explained "165 were 33x5, and 5 were prayers" (researcher documentation in January 2019). While the number 33 itself is a symbol of numbers that is identical to remembrance in Islam. This is based on several hadiths as follows

أَفَلَا أَعَلِمْتُمْ شَيْئًا تَدْرِكُونَ بِهِ مَنْ سَبَقَكُمْ وَتَسْبِقُونَ بِهِ مَنْ بَعْدَكُمْ وَلَا يَكُونُ أَحَدٌ أَفْضَلَ مِنْكُمْ إِلَّا مَنْ صَنَعَ مِثْلَ مَا صَنَعْتُمْ قَالُوا بَلَى يَا رَسُولَ اللَّهِ قَالَ تَسْبِحُونَ وَتُحْمَدُونَ وَتُكَبَّرُونَ خَلْفَ كُلِّ صَلَاةٍ ثَلَاثًا وَثَلَاثِينَ

“Will you be taught something that can make you chase after those who go before you, and that can make you go ahead of people who are after you, and no one is more important unless he does as you do? “They (the people poor) answered: “of course, O Messenger of Allah”. The Prophet sallallaahu 'alaihi wa sallam then explained: “you are blessed, and read tahmid, and read takbir after prayer as much as 33x.”

(HR. Bukhari no. 843 dan HR. Muslim no. 595) [82], [83].

معقبات لا يخيب فاعلهن أو فاعلهن دبر كل صلاة مكتوبة ثلاث و ثلاثون تسبيحة و ثلاث و ثلاثون تحميدة و أربع و ثلاثون تكبيرة

“There are some accompanying practices that whoever says it or does so after the obligatory prayers then he will not lose, that is 33x, 33x, and 34x”

(HR. Muslim no. 596) [83].

مَنْ سَبَّحَ اللَّهَ فِي دُبُرِ كُلِّ صَلَاةٍ ثَلَاثًا وَثَلَاثِينَ وَحَمِدَ اللَّهَ ثَلَاثًا وَثَلَاثِينَ وَكَبَّرَ اللَّهَ ثَلَاثًا وَثَلَاثِينَ فَتِلْكَ تِسْعَةٌ وَتِسْعُونَ وَقَالَ تَمَامٌ لِمَانَةِ لَا إِلَهَ إِلَّا اللَّهُ وَحَدَهُ لَا شَرِيكَ لَهُ لَهُ لُكْلُكَ وَهُوَ لَحْمٌ وَهُوَ عَلَى كُلِّ شَيْءٍ قَدِيرٌ غُفِرَتْ خَطَايَاهُ وَإِنْ كَانَتْ مِثْلَ رَبْدِ الْبَحْرِ

“Whoever glorifies 33 times, 33 times, and 33 times after performing the Fardhu Prayer so that there are 99, then completes it for the hundredth by saying *laa ilaha illallahu wahdahu laa syarikalahu lahul mulku walalhamdu wahuwa 'ala kulli syai-in qodiir*, then his mistakes will be forgiven even as much as foam in the ocean”

(HR. Muslim No. 597) [83].

In addition, in the system of grading the Arabic letters or known as Al-Jumal, *laa ilaaha illallah* has extraordinary features.

Table 1. Table of sequential & grammatical values of the Arabic Alphabet [84]

Sequential Value	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Arabic Letters	ا	ب	ج	د	هـ	و	ز	ح	ط	ي	ك	ل	م	ن
English	alif	ba	cim	dal	ha	vav	ze	ha	ti	ye	kaf	lam	mim	nun
Gematrical Value	1	2	3	4	5	6	7	8	9	10	20	30	40	50
Sequential Value	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Arabic Letters	س	ع	ف	ص	ق	ر	ش	ت	ث	خ	ذ	ض	ظ	غ
English	sin	ayn	fe	oad	kaf	ra	qin	to	so	hi	zel	dad	zi	ḡayn
Gematrical Value	60	70	80	90	100	200	300	400	500	600	700	800	900	1000

Word *laa ilaaha illallah* is composed of 5 letters Alif, 5 letters Lam and 2 letters Ha. The Alif letter has a numerical value of 1, the Lam letter has a numerical value of 30, and the letter Ha has a numerical value of 5

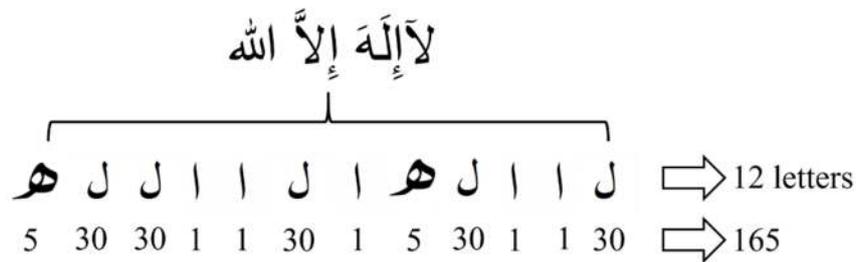


Figure 3. Number of Arabic Letter of *laa ilaaha illallah*

So, if we add up the numerical value of 12 letters in word *لا إِلَهَ إِلَّا اللَّهُ* will be obtained

$$30 + 1 + 1 + 30 + 5 + 1 + 30 + 1 + 1 + 30 + 30 + 5 = 165.$$

If we look more closely then the number 12 which is the number of letters in the monotheistic word is also the result of adding numbers

$$1 + 6 + 5 = 12.$$

Mathematically, researchers look at other phenomena of the numbers 1, 6, and 5 if operated with multiplication operators.

$$1 \times 6 \times 5 = 30$$

The number 30 in Islam shows the number of juz in the Koran. Notice how special this strange number phenomenon is 165. Another odd feature comes when we play the sum of the squares of the first 5 odd numbers (this 5 represents the Prayer as previously assumed),

$$1^2 + 3^2 + 5^2 + 7^2 + 9^2$$

$$1 + 9 + 25 + 49 + 81$$

$$165$$

If it is further developed, of course, another interesting phenomenon can be found from the number 165 that the writer has not yet described. But is this a coincidence? At least the writer asked a more philosophical question than the number 165. The results of interviews with the tariqa practitioners both from the general public, preachers, and bai'at representatives of the Qoodiriyyah Naqsyabandiyyah tariqa obtained information that the numbers 1, 6, and 5 were also associated with the concept of monotheism in Islam, namely Faith, Islam, and Ihsan. The meaning of this semiotic can be analyzed by Pierce's semiotic framework as follows

Table 2. Sign classification based on pierce's semiotics theory of 165 in Dhikr Jahar

Sign	Object	Interpretation
1	Ihsan	Spirit: The appreciation of the presence of Allah on the soul – moral
6	Faith	Mind: Faith by using the logical reasoning to believe in the truth of God
5	Islam	Body: Physical and meet the rules of syari'a or the pillars of Islam

If you look at the three concepts partially as if all three can be understood individually. But actually, the three are a trilogy that cannot be separated. Nurholis Majid explained that "in faith, there is Islam and Ihsan, in Islam, there are faith and Ihsan, and in Ihsan, there is faith and Islam. From this sense of understanding, we see faith, Islam, and Ihsan as the trilogy of Divine teachings (p.1)" [85].

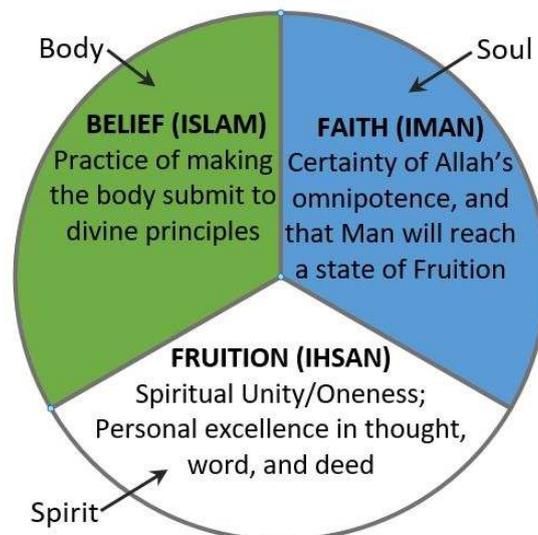


Figure 4. Relation between Islam, Faith, and Ihsan by Hamza Yusuf [85]

Remembrance was chosen as a way to solve problems by the TQN followers [86], but for someone to come to the phase of thinking this stage requires time and effort at least through logical reasoning or experience. In solving problems, the brothers identify the source of their problem and then plan for a solution. Usually, if the problem at hand cannot be solved rationally by effort then the person will choose to resolve the inner way (strengthening mentally/spiritually). When they have decided to choose the form of settlement, they will take concrete steps (endeavor) and within a certain period of time, they will reflect on whether their business is successful or not. The stages of solving problems like this seem to be part of the problem-solving steps mathematically as explained by Polya [87], [88], according to Polya of general framework offers a four-phases description of the problem-solving process: understanding the problem, devising a plan, carrying out the plan, looking back.

4. Conclusion

The author's explanation of the concept of the remembrance of the Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya tariqa illustrates how mathematics is used very firmly in the concept of dhikr. In the teachings of the tariqa, the dhikr is done in large numbers as the teachings of the Koran and the use of the concept of odd numbers in the practice of the dhikr tariqa has a lot of the beauty of Islamic mathematics. This explanation can at least be a Muslim reinforcement in understanding the beauty of the creator. In connection with the effort to investigate the epistemology of the Qoodiriyyah Naqshbandiyyah tariqa remembrance, it is very difficult to state a conclusion on which phenomenon is the basis of the strongest murshid teachers of the Qoodiriyyah Naqshbandiyyah order taking 165. strengthening. In other words, it can be ascertained that the murshid teacher of the Qoodiriyyah Naqsyabandiyyah Ma'had Suryalaya using the number 165 in the practice of remembrance has been very careful and went through a process of deep reflection based on divine guidance.

Acknowledgments

The author would like to say thank and much appreciation to Universitas Siliwangi, as the Home Base for the authors' work, Indonesia Endowment Fund for Education (LPDP) and the directorate of Indonesia Higher Education who supported the author's scholarship program and funding for doctoral program at Universitas Pendidikan Indonesia.

References

- [1] Tribun, "Mengenal Tokoh Sains Islam," *Tribun*, Jakarta, p. 1, 2011.
- [2] R. Halal and S. Aji, "Khazanah Sains dan Matematika dalam Islam," *Salam J. Filsafat dan Budaya Hukum*, vol. 1, no. 1, pp. 155–168, 2014.
- [3] L. A. Rozak, "Sejarah Matematika Didunia Islam," in *Karya Mahasiswa Teori Bilangan*, vol. 1, no. 1, E. Yulianto, Ed. Tasikmalaya: Universitas Siliwangi, 2015, pp. 186–190.
- [4] E. Masood, *Science and Islam: A History*, vol. 272, no. 7281. United Kingdom: ICON BOOKS, 2009.
- [5] H. M. H. Masruri and I. Rossidy, "Filsafat Sains dalam Al-qur'an: Melacak Kerangka Dasar Integrasi Ilmu dan Agama," *El-qudwah*, 2007.
- [6] M. Haris, "Pendidikan Islam Dalam Perspektif Prof. H.M Arifin," *J. Ummul Qura*, vol. 6, no. 2, pp. 1–19, 2015.
- [7] N. M. Awan, "Quran and Mathematics-I," *Jihāt al-Islām*, vol. 3, no. July-December, pp. 39–59, 2009.
- [8] Abdussakir, *Matematika dalam Alquran*. Malang: UIN-Maliki Press, 2014.
- [9] R. Halal, S. Aji, H. M. H. Masruri, and I. Rossidy, "Khazanah Sains dan Matematika dalam Islam," *Salam J. Filsafat dan Budaya Hukum*, vol. 1, no. 1, pp. 155–168, 2014.
- [10] A. El Mouatasim, "Simple and Multi Linear Regression Model of Verbs in Quran," *Am. J. Comput. Math.*, vol. 08, no. 01, pp. 68–77, 2018.
- [11] F. Basya, *Jelajah Indonesia Negeri Saba'*, 1st ed. Jakarta: Zahira, 2015.
- [12] F. Basya, *Matematika Islam 3*, 2nd ed. Jakarta: Republika, 2009.
- [13] S. M. Azmayesh, "The teachings of a Sufi master," p. 202, 2002.
- [14] Z. A. Kalhor, "Scholars and Sufis," *The Friday Times*, Sindh, pp. 1–6, 2018.
- [15] D. P. Brewster, "The study of Sufism: towards a methodology," *Religion*, vol. 6, no. 1, pp. 31–47, 1976.
- [16] A. B. Aceh, *Penghantar Ilmu Tarekat*. Solo: Ramadhani, 1996.
- [17] S. Mulyati, *Mengenal dan Memahami Tarekat -Tarekat Muktabarah di Indonesia*. Jakarta:

Kencana, 2004.

- [18] T. Basri, F. Badaruddin, and A. M. Mohamad, "Konsep Zikir Darajah dalam Disiplin Ilmu Tarekat," *J. Islam dan Masy. Kontemporari*, vol. 8, no. 1, pp. 61–72, 2014.
- [19] M. Van Bruinessen, *Kitab Kuning Pesantren dan Tarekat*. Bandung: Mizan, 1995.
- [20] S. Suniah, "Kritik Terhadap Tarekat: Kajian Terhadap Pemikiran Sayyid Usman bin Yahya," Universitas Islam Negeri Syarif Hidayatullah, 2015.
- [21] E. Feijs, J. DeLange, M. van Reeuwijk, M. S. Spence, J. Brendefur, and M. A. Pligge, *Looking at an Angle: Geometry and Measurement*. Chicago: Encyclopedia Britannica, Inc., 2006.
- [22] H. Alviani, "Implementasi Ajaran Tarekat Qadiriyyah Wa Naqsyabandiyah dalam Kehidupan Sosial Masyarakat (Studi di Desa Depok Rejo Kecamatan Trimurjo Kabupaten Lampung Tengah)," Universitas Islam Negeri Raden Intan, 2017.
- [23] M. Abels *et al.*, *Ups and Downs*. Chicago: Encyclopedia Britannica, Inc., 2006.
- [24] A. Knysh, "Sufism, Black and White A Critical Edition of Kitāb al-Bayād wa-l-Sawād," *J. Sufi Stud.*, vol. 3, no. 1, pp. 93–95, 2014.
- [25] A. S. Ta'jul Arifin, *Kitab Uquudul Jumaan*, 3rd ed. Tasikmalaya: PT. Mudawwamah Warohmah, 2009.
- [26] Fathurahman, *Serambi Islam [31] Tarekat*. 2017.
- [27] A. Y. Yanto, *Keutamaan Zikir Khafi*. Indramayu: Madzikta, 2017.
- [28] M. Salahudin, "Amalan Tarekat Qadiriyyah Wa Naqsyabandiyah Sebagai Proses Pendidikan Jiwa Di Masjid Babul Muttaqin Desa Kradenan Jetis Ponorogo," *Esoterik*, vol. 2, no. 1, pp. 65–79, 2016.
- [29] S. Purwanto, "Relaksasi dzikir," *Suhuf*, vol. XVIII, no. 01, pp. 39–48, 2006.
- [30] L. Qomariah, "Kontribusi Tarekat Qadiriyyah Naqsyabandiyah terhadap Pembinaan Akhlak Masyarakat Kelurahan Kedinding Kecamatan Kenjeran Kota Surabaya," UIN Sunan Ampel Surabaya, 2010.
- [31] R. Anwar, *Akhlak Tassawuf*. Bandung: Pustaka Setia, 2010.
- [32] Aisyah, "Pengaruh Amalan Tarekat Qadiriyyah Wa Naqsyabandiyah terhadap Akhlak Santri di Pondok Pesantren Suryalaya Tasikmalaya," Universitas Islam Negeri Syarif Hidayatullah, 2010.
- [33] Abdusykykir, *Matematika dalam Al-Quran*. UIN Maliki Press, 2014.
- [34] F. Basya, *Matematika Al-Quran*. Jakarta: Republika, 2005.
- [35] T. Pendra, "Klasifikasi Ayat-ayat Al-quran yang Memuat Konsep Matematika," Universitas Islam Negeri Maulana Malik Ibrahim, 2012.
- [36] M. N. Al-Abani, *Shahih Sunan Tirmidzi: Seleksi Hadist Shahih dari Kitab Sunan Tirmidzi*, 1st ed. Jakarta: Pustaka Azzam, 2002.
- [37] I. Majjah, *Shahih Bukhari (e-boob version)*. 2010.
- [38] A. Tafsir, *Filsafat Umum*. Bandung: PT Remaja Rosdakarya, 2018.
- [39] A. Tafsir, *Filsafat Ilmu: Mengurai Ontologi, Epistemologi, dan Aksiologi Pengetahuan*, 10th ed. Bandung: Rosda, 2018.
- [40] R. E. Roblin, "Faith and Reason: Essays in the Philosophy of Religion - The Riview of R.G. Collingwood," in *International Phenomenological Society Philosophy and Phenomenological Research*, 1968, pp. 628–629.
- [41] U. D'Ambrosio, "Ethnomathematics." Editora Atica, Sao Paulo, 1990.
- [42] U. D'Ambrosio, "Ethnomathematics and Its First International Congress," *ZDM*, vol. 31, no. 2, pp. 50–53, 1998.

- [43] U. D'Ambrosio and B. S. D'Ambrosio, "The Role of Ethnomathematics in Curricular Leadership in Mathematics Education," *J. Math. Educ. Teach. Coll.*, vol. 4, no. Spring-Summer, pp. 19–25, 2013.
- [44] J. W. Creswell, *Penelitian Kualitatif dan Desain Riset*, 3rd ed. Yogyakarta: Pustaka Belajar, 2015.
- [45] M. Rosa and D. C. Orey, "Ethnomodeling as a Research Theoretical Framework on Ethnomathematics and Mathematical Modeling," *J. Urban Math. Educ.*, vol. 6, no. 2, pp. 62–80, 2013.
- [46] I. Muzdalipah and E. Yulianto, "Ethnomathematics Study: The Technique of Counting Fish Seeds (Osphronemus Gouramy) of Sundanese Style," *J. Medives*, vol. 2, no. 1, pp. 25–40, 2018.
- [47] E. Yulianto, S. Prabawanto, and J. Sabandar, "Pola matematis dan sejarah batik sukapura : Sebuah kajian semiotika," *J. Penelit. Pendidik. dan Pengajaran Mat.*, vol. 4, no. 1, pp. 15–30, 2019.
- [48] A. Bakker and M. H. G. Hoffmann, "Diagrammatic Reasoning as The Basis for Developing Concepts: A Semiotic Analysis of Students' Learning about Statistical Distribution," *Educ. Stud. Math.*, vol. 60, no. 1, pp. 333–358, 2005.
- [49] C. S. Pierce, *The essential Peirce. In The Peirce Edition Project*, vol. 2. Bloomington: Indiana University Press, 1998.
- [50] B. Mudjiyanto and E. Nur, "Semiotika Dalam Metode Penelitian Komunikasi," *Penelit. Komunikasi, Informatika dan Media Massa*, vol. 16, no. 1, pp. 73–81, 2013.
- [51] F. de Saussure, *Course in General Linguistics*. New York: NY: McGraw-Hill, 1959.
- [52] U. Eco, *Semiotics and the Philosophy of Language*. Bloomington: IN: Indiana University Press, 1986.
- [53] M. A. K. Halliday, *Language as Social Semiotic: The Social Interpretation of Language and Meaning*. London: Edward Arnold, 1978.
- [54] M. A. K. Halliday and R. Hasan, *Language, Context and Text: Aspects of 881 Language in a Social-Semiotic Perspective*. Oxford: Oxford Universitt Press, 1989.
- [55] A. Sobur, *Semiotika Komunikasi*. Bandung: Remaja Rosdakarya, 2004.
- [56] L. Vygotsky, *Collected works (Vol. 3)*. New York: Plenum, 1997.
- [57] P. Ernest, "Towards A Semiotics of Mathematical Text (Part3*)," *Learn. Math.*, vol. 28, no. 3, pp. 42–49, 2008.
- [58] C. Morgan, "What Does Social Semiotics Have to Offer Mathematics Education Research?," *Educ. Stud. Math.*, vol. xxx, no. 1, pp. 1–27, 2004.
- [59] S. Ongstad, "Mathematics and Mathematics Education as Triadic Communication? A Semiotic Framework Exemplified," *Educ. Stud. Math.*, vol. 61, no. 1, pp. 247–277, 2006.
- [60] L. Radford, "Algebraic Thinking from A Cultural Semiotic Perspective," *Res. Math. Educ.*, vol. 12, no. 1, pp. 1–19, 2010.
- [61] L. Radford, "Iconicity and Contraction: A Semiotic Investigation of Forms of Algebraic Generalizations of Patterns in Different Contexts," *ZDM Math. Educ.*, vol. 40, no. 1, pp. 83–96, 2007.
- [62] L. Radford, "Why Do Gestures Matter? Sensuous Cognition and The Palpability of Mathematical Meanings," *Educ Stud Math*. Springer Science+Business Media New York, Canada, 2008.
- [63] L. Radford, S. Demers, J. Guzman, and M. Cerulli, "Calculators, Graphs, Gestures and The Production of Meaning," *Int. Gr. Psychol. Math. Educ.*, vol. 4, no. 1, pp. 55–62, 2003.
- [64] L. Radford, G. Schubring, and F. Seeger, *Semiotics in Mathematics Education*. Netherlands: Sense Publisher, 2008.
- [65] T. P. P. Schroeder-heister, "Advances in Proof- Theoretic Semantics," in *Trend in Logic*, 2016, pp. 1–283.

- [66] C. Winsløw, "Semiotics as an Analytic Tool for The Didactics of Mathematics," *Nord. Stud. Math. Educ.*, vol. 9, no. 2, pp. 1–15, 2004.
- [67] J. Becker and M. Varelas, "Semiotic Aspects of Cognitive Development : Illustrations From Early Mathematical Cognition," *Psychol. Riview*, vol. 100, no. 3, pp. 420–431, 1993.
- [68] L. B. Boistrup, *Assessment Discourses in Mathematics Class-rooms: A Multimodal Social Semiotic Study*. Stockholm: Stockholm University, 2010.
- [69] M. G. B. Bussi and M. A. Mariotti, "28 Semiotic mediation in the mathematics classroom Artifacts and signs after a Vygotskian perspective," no. 1962. pp. 746–783, 2008.
- [70] P. Ernest, "A semiotic perspective of mathematical activity: the case of number," *Educ. Stud. Math.*, vol. 61, no. 1, pp. 67–101, 2006.
- [71] V. Font, J. D. Godino, and B. D. Amore, "An Onto-Semiotic Approach to Representations in Mathematics Education," *Learn. Math.*, vol. 27, no. 2, pp. 1–14, 2007.
- [72] J. D. Godino and C. Batanero, "Clarifying The Meaning of Mathematical Objects as A Priority Area of Research in Mathematics Education," in *In Mathematics Education as A Research Domain: A Search for Identity*, Netherlands: Springer, 1998, pp. 1–17.
- [73] J. D. Godino, C. Batanero, and R. Roa, "An Onto-Semiotic Analysis of Combinatorial Problems and the Solving Processes by University Students," *Educ. Stud. Math.*, vol. 60, no. 1, pp. 3–36, 2005.
- [74] J. L. Lemke, "Mathematics in The Middle : Measure, Picture, Gesture, Sign, and Word," no. January. Brooklyn College School of Education, New York, pp. 1–35, 2015.
- [75] J. W. Creswell, "Chapter 3: Designing a Qualitative Study," *Qual. Inq. Res. Des. Choos. among five approaches*, pp. 35–41, 2007.
- [76] I. Etikan, S. A. Musa, and R. S. Alkassim, "Comparison of Convenience Sampling and Purposive Sampling Comparison of Convenience Sampling and Purposive Sampling," *Am. J. Theor. Appl. Stat.*, vol. 5, no. January 2016, pp. 1–5, 2016.
- [77] A. Sobur, *Filsafat Komunikasi (Tradisi dan Metode Fenomenologi)*. Bandung: PT Remaja Rosdakarya, 2014.
- [78] E. Azharini and Nancy, "Metode Penelitian Kualitatif - Fenomenologi," Sekolah Tinggi Agama Islam Sorong, 2019.
- [79] S. Nindito, "Fenomenologi Alfred Schutz : Studi tentang Konstruksi Makna dan Realitas dalam Ilmu Sosial," *J. Ilmu Komun.*, vol. 2, no. 1 Juni, pp. 79–95, 2005.
- [80] M. Hajaroh, "Paradigma, Pendekatan dan Metode Penelitian Fenomenologi," *Jurnal Ilmiah FIP Universitas Negeri Yogyakarta*. Yogyakarta, pp. 1–21, 2010.
- [81] A. S. Ta'jul Arifin, *Kitab Miftahus Shudur (Kunci Pembuka Hati): Translated by Anding Mujahidin*. Jakarta: PT. Laksana Utama, 2005.
- [82] A.-B. A. Al-Ja'fi and A. I. Bin Muhammad, *Shahih Al-Bukhari*. Damaskus: Dar Thuwaqun Nahjah, 2008.
- [83] I. Muslim, *Shahih Muslim*, Jilid V. Beirut: Darul Fikr, 1992.
- [84] Al-Khalil bin Ahmad Al-Farahidi, *Kitab al-Jumal Fi al-Nahwi*. Muassasah al-RIsalah, 1985.
- [85] N. Madjid, "Iman Islam dan Ihsan sebagai Trilogi Ajaran Islam." pp. 1–12, 1994.
- [86] S. Nurhasanah, "Implementasi metode dzikir untuk meningkatkan self-esteem (harga diri) remaja di Pondok Pesantren Suryalaya, Tasikmalaya, Jawa Barat," UIN Jakarta, 2015.
- [87] G. Polya, *How to Solve It Mathematical Method (With a new foreword by John H. Conway)*, Princeton. Princeton University Press and Oxford, 2004.
- [88] A. H. Schoenfeld, "Pólya , Problem Solving , and Education," *Math. Mag.*, vol. 60, no. 5, 1987.