Integration of Mathematics Learning Strategies with The Cultivation of Islamic Teaching Values in The Context of Applicable Jurisprudence

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ABSTRAK

Artikel ini bertujuan untuk mendeskripsikan aplikasi beberapa ilmu matematika pada kajian fiqih yang dimasukkan kedalam strategi pembelajaran matematika. Hal ini didasarkan pada permasalahan yang terlihat dalam pembelajaran di kelas bahwa penyampaian matematika hanya sekedar penyampaian teori atau rumus. Walau terkadang sudah dikaitkan dengan konteks keseharian, akan tetapi belum banyak yang mengkaitkan dengan keagamaan, khususnya dikaitkan dengan ilmu fikih yang termasuk dalam bidang ilmu keislaman. Beberapa kajian fikih yang dipaparkan disini yang dianggap sering berkaitan dengan kehidupan sehari-hari. Secara detailnya dapat menggunakan analogi yang serupa. Metode yang digunakan adalah penelitian studi literatur, yang bersumber pada dokumen-dokumen terkait yang sesuai dengan pengkajian. Hasil dari tulisan ini menunjukkan bahwa memang matematika digunakan dalam fiqih, sehingga dapat digunakan dalam strategi pembelajaran matematika. tahapan yang dapat dimasukkan adalah penyebutan nama Allah, penggunaan istilah, ilustrasi visual, contoh-contoh, penyisipan ayat/hadits, Sejarah, dan jaringan topik. Kajian fiqih yang terhubung dengan matematika adalah permasalahan Thaharah, sholat, Zakat, Puasa, Haji dana juga Faraid. Semua kajian tersebut menggunakan keilmuan dasar yang berada pada matematika yang dalam penggunaanya mudah untuk diterapkan.

ABSTRACT

This article aims to describe the application of several mathematical sciences in the study of jurisprudence which are included in mathematics learning strategies. This is based on the problems seen in classroom learning that the delivery of mathematics is only the

delivery of theory or formulas. Even though it is sometimes linked to everyday contexts, it is still lacking in linking it to religion, especially to the science of jurisprudence which is included in the field of Islamic science. Some of the fiqh studies presented here are considered to be often related to everyday life. In detail, you can use a similar analogy. The method used is literature study research, which is sourced from related documents that are in accordance with the study. The results of this paper show that mathematics is indeed used in fiqh, so it can be used in mathematics learning strategies. Stages that can be included are mention of Allah's name, use of terms, visual illustrations, examples, insertion of verses/hadith, history, and topic networks. The study of jurisprudence that is connected to mathematics is the problem of Thaharah, prayer, Zakat, Fasting, Hajj and Faraid. All of these studies use basic knowledge in mathematics which is easy to apply.

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A. INTRODUCTION

Islamic civilization has a very important heritage. Mathematics is one of the Islamic heritages, in addition to the heritage of other civilizations. Mathematics has very essential role for other sciences (Gradini et al., 2017). Among them are the fields of astronomy, medicine, mechanical technology, optics, history and of course the religious sciences. Nowadays, there are many discoveries found on behalf of westerners who, when traced, have a mostly non-Muslim background. However, Muslims are also still recognized for their inventions, one of which is Al-Khwarizmi. Khwarizmi is the first person which finds zero (Setiawan, 2015). They are able to uncover the secrets that are a relic of Islamic civilization and on behalf of it. It's ironic to see something like this.

The triumph of Islamic civilization in mathematics that occurred in the past is a very important study. Mathematics in the heyday of Islam, precisely in the Middle Ages, focused on the applied side of mathematics (Puadi, 2017). Mathematics became a very strong foundation in almost all the great minds of that era. The resulting discoveries also amazed and proud of Muslims. In this Islamic civilization there are mathematicians who also have expertise in other fields, and of course also experts in the field of religion. Da'wah activities require a precise strategy and a clear concept (Maullasari, 2019). The religious field is the basis, because da'wah can be done in various ways, one of which is by using his field of expertise, mathematics.

Some mathematicians have often heard, or even in some articles as a rationale. Al-Khwarizmi became one of the leading mathematicians whose names are often mentioned when studying mathematics. There are other figures who are also

mathematicians and experts in other fields. He is Al-Qalasadi. Al-Qalasadi lived in the era around the IX or 15th century AD. Al-Qalasadi is also the creator of the modern fractional notation. (Admin, 2017).

Mathematics and fiqh cannot be separated. Many aspects of fiqh require mathematical calculations. Mastery of mathematics is needed to make it easier to calculate the quantities that are in the laws that have become provisions derived from the Qur'an. Mastery of mathematics is important because it can be an attempt to practice the sciences of fiqh, especially those related to calculations.

Mathematics and religion (especially Islam) are related. For example, every Muslim is required to pay zakat on assets when their assets have reached the nishob and haul. Another case, for example the problem of taharah, in the law the minimum water that can be used is to reach two kullah. The problem of fasting, about the length of a person's fast, which is from sunrise to sunset. Of course, fiqh problems like this really need math to solve them.

Learning that does not link material to religion can be an obstacle in developing a holistic understanding (Arroisi & Sa'adah, 2020). Most modern curricula tend to be more secular, with a primary focus on academic and scientific aspects. This can lead to a lack of integration between subject matter and students' religious values. As in mathematics learning, there is often little space for discussion about how this knowledge can be understood in the context of religious or ethical values, which can reduce students' understanding of the relationship between science and their beliefs.

The lack of connection between objectivity and religious aspects can also lead to a lack of appreciation for religious pluralism and tolerance in society (Huda & Maghfiroh, 2019). Students may not be given the opportunity to understand different beliefs and ways of thinking that could enrich their worldview. Therefore, efforts need to be made to integrate religious values into learning, consistent with an inclusive approach that respects the diversity of religious beliefs that exist in society. This can help create a more balanced learning environment and support students' holistic development in both academic and spiritual areas.

The importance of linking material to religion lies in the ability to create more diverse and relevant learning experiences for students that can enrich their understanding of the world and its values (Agustina et al., 2020). By integrating religious aspects into education, students can develop a deeper understanding of the relationship between science, ethics, and their spiritual values. It also helps create awareness of religious pluralism and encourages tolerance as students are more likely to respect differences in beliefs and understand the positive contribution that different religions can make in understanding and solving global problems. Integrating religion into learning can also provide a strong moral context for decision making and action, helping students deal with complex situations and differing values in everyday life.

Fiqh is a branch of science in Islam. Linguistically, fiqh means understanding. The majority of Muslims in Indonesia adhere to the fiqh of the Imam Shafi'i school of thought (Sasmita, 2018). As for the topic of discussion, the scholars (in this case the Syafi'iyyah scholars) divide fiqh into four topics, namely worship, muamalat, munakahat, and 'uqubat (Sinaga et al., 2020). Fiqh of worship is fiqh that discusses the affairs of the hereafter or mahdhoh worship. Fiqh mu'amalat is fiqh that discusses

matters of efforts to maintain human survival. Fiqh munakahat is fiqh that discusses efforts to maintain the continuity of offspring. And fiqh 'uqubat is fiqh that discusses efforts to protect society (Imaduddin et al., 2021).

B. RESEARCH METHODS

Data in qualitative form, one of which is in the form of narratives or sentences (Komara, 2012). According to Gogdan and Guba, a qualitative approach is a research procedure that produces descriptive data (data collected in the form of words, images, and not numbers). Meanwhile, the type of research that researchers use is library research. In library research, there is a connection between research objects obtained through library activities. Good research must start from reality or something real, the clear reality of the problem (Ibrahim, 2015). This study was carried out using a qualitative and liberal research approach which was carried out simultaneously. Literature research is an attempt to use the method, namely by integrating mathematics with verses from the Koran.

C. RESULTS AND DISCUSSION
Fiqh is fun math

The study of Islamic law has a clump of interrelated knowledge. These studies are fiqh, ushul fiqh, and fiqh rules (Ibrahim, 2019). Fiqh according to the term is practical knowledge about syar'i laws obtained through the process of digging and studying from syar'i arguments. Digging and studying is also called istinbat (Nurhayati, 2018). Ushul fiqh can be interpreted in a simple way, which includes methods or methods that are used as intermediaries to produce a law (Masykur, 2019). Knowledge of the methods and procedures for producing syar'i laws through the arguments is called ushul fiqh. While the last branch of knowledge is the rules of fiqh. The rules of fiqh consist of two words, namely rules and fiqh. Rule means a formula that becomes a benchmark and principle (Hidayatullah, 2019).

The three disciplines above are brought together and intersect in one term of syar'i law. In simple terms, the differences between the three branches of knowledge can be described as follows. Usul fiqh is a production house or factory, while fiqh is a product, while fiqh rules are a binder that connects products that are scattered and have the same type in production. In short, fiqh is a result or product, ushul fiqh is a method (process) of how to produce, while fiqh is a medium for organizing and linking as well as caring for the resulting product. If fiqh is rice, then ushul fiqh is a way of cooking rice, while fiqh rules classify types of rice.

Mathematics in which there are calculations makes some people don't like it (Sulistyawati, 2018). This can have an impact on problems related to calculations, such as fiqh in Islamic law. The application of fiqh becomes complicated because those who have interests do not (less) have the ability in the field of mathematics. Especially if it involves calculations that are not easy to understand, such as zakat and inheritance. In fact, mathematics is to facilitate humans and actually Islam is an easy religion. As the word of Allah SWT

$$\text{... يُرِيدُ ٱللَّهُ بِكُمُ ٱلۡيُسۡرَ وَلَا يُرِيدُ بِكُمُ ٱلۡعُسۡرَ ...}$$

"... Allah wants ease for you, and does not want difficulty for you..." (Q.S Al-Baqarah: 185).

The ease of understanding the rules of religious knowledge, which includes the science of fiqh, requires two main ways. First, strong will. It is based on everything is dependent on the intention, this intention being the beginning of the will. Positive dreams can come true as long as you have a strong will (Fatkhurahman, 2016). Second, the right method. The method is supported with the required tools already available. The method also includes the procedures that will be carried out in doing something. Appropriate way of use in order to maximize the use of legal basis that is understood and useful for the environment (A'yunin et al., 2020).

Provisions that already exist in the Qur'an and hadith need to be supported by qualified mathematical abilities. These quantities have already been determined, so it remains only to do the calculations. Careful calculations will yield precise results. So that the impact will be more conciliatory. There will be no debate in the future.

Mathematics as a servant to other sciences (Siagian, 2017). The term is heard quite often, especially for individuals who often deal with mathematics. These fields are related to the activities of human life, ranging from spiritual activities as well as physical activities. Spiritual activities are related to religious activities contained in the context of fiqh. Physical activity is related to activities in the environment and society. These spiritual and physical activities are carried out regularly every day, such as regular worship (prayer) at certain times, or such as sports that can be done together in the morning or evening. This regularity is synonymous with regular mathematics with the patterns in it.

In other words, science in which there is regularity, it can be connected with mathematics or mathematically in the form of a mathematical model. This is in line with the notion of mathematics as an exact science (Gie, 1985). What shows certainty in mathematics is that the rules are clear, the laws are clear, and the provisions are clear, and even the formulas are clear. Regarding the study of fiqh, for example, the pillars of ablution that have been determined about the pillars, namely (1) intention, (2) washing the face, (3) washing two hands up to the elbows, (4) wiping part of the head, (5) washing two feet up to the ankles and (6) orderly. All of these pillars have legal provisions, sizes, rules, calculations that are clearly syar'i.

For example in a rak'ah, prayer can be messy to the congregation if an imam prays if he can't count the number of rak'ahs that must be done. Likewise, the determination of prayer times also requires mathematical calculations. If determining the time for the Asr prayer is based on the length of an object's image that exceeds the original object, in certain areas such as Ohio in December, January, the length of an object's image always exceeds the length of the original object. Likewise in determining the level of accuracy of the Qibla direction is a bit problematic without the help of mathematic (Suyitno & Hardi, 2014). Moreover, the pilgrimage also requires mathematics. Therefore, understanding the teachings of Islam is not perfect without understanding mathematics.

Mathematics learning strategies are applied in the context of jurisprudence

Some problems in the law of fiqh related to calculations using mathematics. for example, determining the amount of kullah in purified water, praying with time, pillars and raka'at, fasting and its time and law, zakat with its amount, hajj and its

pillars, and distribution of inheritance (faraidl). Learning strategies using fiqh applications can help students understand and apply the principles of Islamic law in everyday life. By combining these learning strategies with the application of case law, educators can help students understand and apply case law principles more effectively in their daily lives. This can strengthen religious and ethical values in their education.

1. Always mention the name of Allah in connection with fardhu prayers

Before learning begins, it is traditional to start by reading Basmlllah and praying together. Sometimes it is even found in some RPPs that include written mention/pronunciation of Basmallah and reading the study prayer. Then at each stage by stage in solving mathematical problems and when ending the learning activity, efforts are made to close together by saying Alhamdulillah. Educators or instructors should always remind students of the importance of always remembering to use the name of Allah for all activities and to be grateful to Allah, especially when exploring Allah's knowledge.

Apart from that, the name of Allah is always said when praying. A Muslim has prayers that must be done every day, namely in the form of fardhu prayers. When a Muslim is already in a state of purity, then he can perform the prayer which is an obligation for all Muslims. The obligatory prayer consists of 5 predetermined times as well as many rak'ahs and times. About rak'ah and time this can be related to mathematics. In addition, the movements in prayer can also be integrated with mathematics, such as in a standing position (takbirotul ikhrom), bowing, prostration and sitting.

The provisions for the number of rak'ahs for each of these prayers, namely dawn 2 rakaat, zuhur 4 rakaat, asar 4 rakaat, maghrib 3 rakaat, and Isha 4 rakaat. If you add up, the number is 17 rakaat. When multiplied, we get 384. 17 and 384 can be related to mathematics, namely odd and even numbers. In addition, 384 can also be converted into another form, namely 384 = 27 x 3 which is included in the study of power numbers.

Other things related to the count in prayer, such as the number of readings that should be read when praying such as takbir for each rak'ah or the whole cycle at each prayer time or tasbih reading in bowing or prostration (Firdaus, 2001).

The number of obligatory prayers in a day and night cycle is five times, namely Fajr, Zuhur, Asr, Maghrib, and Isha with the provisions of the time according to Allah SWT. which has been taught by the Prophet Muhammad SAW, for example to determine the arrival of prayer times without looking at the clock and prayer time schedule. For example, if someone is in an unfamiliar area, whether that's where it causes him not to find a clock as a tool to see prayer times, according to the verse of the Qur'an, Surah An-Nisa '103 states:

إِنَّ ٱلصَّلَوٰةَ كَانَتْ عَلَى ٱلْمُؤْمِنِينَ كِتَٰبًا مَّوْقُوتًا

"Indeed, prayer is an obligation whose time is set for the believers" (Q.S An-Nisa: 103).

As for the determination of prayer times, the Prophet Muhammad SAW explained clearly, as follows.
1)   Determining the arrival of dzuhur time

The Prophet SAW said (meaning) "and the time for dzuhur begins when the sun has slipped." (Hadith narrated by Muslim). In other words, the Zuhr prayer is a prayer that is performed when the sun slips towards the west after being directly above our heads.

2)   Determine the time of Asr
The Prophet SAW said, (meaning) "Jibril prayed with the Prophet sallallaahu'alaihi wa sallam and his companions on the first day when his shadow was the same as his object" (Hadith narrated by Muslim).

3)   Determine the arrival of sunset time
The words of the Prophet SAW (meaning) "and the time of Maghrib when the sun sets" (Hadith narrated by Bukhari and Muslim).

4)   Determining the time of Isha
The beginning of Isha time is when the reddish color in the sky disappears. The Hadith of the Prophet SAW (meaning) "is the Prophet sallallaahu 'alaihi wa sallam performing the Isha prayer when the reddish color sets" (hadith narrated by Muslim).

5)   Determining the arrival of dawn
Hadith of the Prophet Muhammad S.A.W. (meaning) "and the Prophet sallallaahu 'alaihi wa sallam offered the morning prayer when dawn broke (HR. Muslim).

2. The use of the term is associated with Hajj

There are many terms in mathematics. Among these terms can be nuanced with terminology in Islamic teachings, including: the use of names, events or objects that have Islamic nuances. For example: names (Ahmad, Fatimah, Khodidjah), events (donating land of a certain size, speed of travel when making the pilgrimage from Saffa to Marwa during the Hajj).

Throwing jamrah 7 times 3, which must prepare as many as 21 stones that have been prepared. In this activity many things can be introduced to children, such as getting to know the concept of sequence and counting, because all of them use procedures that have been arranged in order from intention to end and then they also know the simple mathematical concept of counting 7.

Likewise, when doing sa'i,

For example, the distance between the shofa hills and Marwah is 500 meters, while each person's steps are 50 cm. How many steps does the person need to complete the sai? The solution is because each step is 50 cm, while the distance between the shofa and the marwa is 500 meters = 50,000 cm. Thus, the steps required are 50,000/50 = 1,000 steps.

So to perfect the sai requires as much as 7 x 2 x 1,000 = 14,000 steps.

In addition, it can also be expanded by finding the length of time to do sa'i by knowing one's speed when doing the jog. For example, in 1 minute that person can take 140 steps, then the time needed to do sa'i is 14,000/140 = 100 minutes = 1 hour 40 minutes, this is the time it takes someone to do sa'i without resting.

3. Visual illustration of purification

Learning tools and media in mathematics subjects can be visualized with Islamic pictures or portraits. For example, in discussing symmetry we can give examples of mosque or prayer room ornaments, in discussing spatial structures we can display the Kaaba, in discussing flat structures we can display the area of prayer rugs. Apart from that, it can also be associated with things related to thaharah. Thaharah uses water that must meet the requirements.

The main study in the book of fiqh is about purification (taharah). This study is about a person must be in a state of something when going to perform obligatory prayers (prayer) or in carrying out certain activities. These studies include bathing, ablution and tayammum. The main way of purification is to use water as a purification tool. However, if water is not found, it is permissible to use other tools, one of which is dust.

The types of water, as a means of washing, have been determined. So that not all water can be used for purification, for example, flavored drinking water. Even though it is in large quantities and if it is used in purification it is sufficient, but it is still not allowed to use drinking water for purification utensils. Even though the water is pure, it is not purifying. One indicator of water that can be used for washing is that the taste does not change.

Discussion of the fiqh of the taharah school of Imam Syafi'i which contains mathematical concepts, namely: (1) signs of puberty, (2) menstruation, purity and childbirth, (3) conditions for washing with stones, (4) pillars of ablution and tayamum, (5) water is little and water a lot, (6) cancels ablution and cancels tayammum and (7) prohibits people who have minor hadats, junub and menstruation. The mathematical concepts contained in the discussion of fiqh taharah madhhab Imam Syafi'i are: (1) sets, (2) logic, (3) inequalities, (4) conversions, (5) geometry (building space) and (6) numbers Original (Imaduddin et al., 2021).

In addition to the type, size is also a requirement for water that can be used for purification. The amount of water used for purification has also been determined based on syara', such as the volume of water used for purification reaches the size of two kullah. The definition and size of the two kullahs is explained in the hadith of the Prophet S.A.W. which means
"If there is enough water for two kullahs, nothing will be unclean" (narrated by five hadith experts).

The measurement of the volumes of these two kullahs intersects with mathematics. In addition to having to know the size of the 2 kullahs stipulated by the Shari'ah, you must also know the size of the 2 kullahs that must be fulfilled. Dua Kulah is the amount of water which according to its size is 1,25 cubits for the length, width and height/depth, while the cubit is a measure of the length from the elbow to the tip of the middle finger (± 47 cm, meaning 1,25 cubits = 1,25 x 47 cm = 58,75 cm) (Muniri, 2016).

Whereas in the Al-Munawwir Arabic-Indonesian dictionary there is the word al-qullatu which means al-jarratul'azhiimatu, in Indonesian translation it means a big jar. There is also the word al-qullataani which means the size of the water is 60 cm^3. This size is close to 1,25 cubits or as above, namely 58,75 cm (Arik, n.d.). so that to reach the size of two kullahs, the minimum volume of water is (58,75 x 58,75 x 58,75) cm^3 = 202,779.296875 or rounded up to 203 cm^3. This size when converted into liters becomes 203 liters.

In general, there are several ways that can be done to measure the shape of a water container, namely by using spatial shapes that can be found in mathematics; block/cube/prism; cylinder/tube. Like the form of water reservoirs are buckets or used drums; then to find the volume of the container can use the following formula.

1) Using the formula p x l x t which is length x width x height/depth. For example, it is known that a tub is 50 cm long, 50 cm wide and 100 cm deep/height. To find the volume, what is done is to substitute this value in the formula so that we get (50 x 50 x 100) cm^3 = 250.000 cm^3. Then convert it into liter units using the following conditions: 1 liter = 1000 ml = 1000 cm^3, then 250.000 cm^3 = 250 liters. Because two kulahs must reach 203 liters, it means that if the tub is filled with water, it has reached more than two kulahs.

2) To determine the volume of a cylindrical/tube-shaped container, the formula volume = r^2 t, with = 22/7 or 3,14, r = radius of the circle = half the diameter or the diameter of the circle of the base of the container, t = height/inside receptacle. For example, it is known that a drum has a diameter of 70 cm and a height of 80 cm. First find the value of r with the formula diameter, so r = 35 cm. Then find the volume with the formula r^2 t, meaning 22/7 x (35 cm) 2 x 75 cm = 288750 cm^3. After being converted to 288,75 liters. Thus if the drum is filled with water it will reach two kullahs at a certain height, even more if it is filled to the brim (Muniri, 2016).

3) The volume of the prism can be determined by the formula V = area of the base x height. Suppose the base of a prism is a right triangle with a side length of 200 cm and a side of the base 100 cm and a height of 150 cm. then the volume of the tub is (200 x 100 x 150 / 2) cm^3 = 1500000 cm^3 = 1500 liters, then the water container has exceeded 2 kullah so it is allowed to be used for purification.

4. Applications or examples

In explaining a competency, you can use teaching materials by providing applicable examples. For example, material about money and trading can be explained with the help of Islamic banking practices with a profit sharing system. Apart from that, the discussion of fractions can also be related to the distribution of inherited assets in accordance with the guidelines in the Koran (Surat An-Nisaa' verses 11 and 12) and Hadith.

Umar bin Khattab has said (Muniri, 2016),

"Learn the science of faraid, because it is actually part of your religion." After that, Amirul Mu'minin said again, "If you talk, talk with faraid science, and if you play around, play with one throw." After that, Amirul Mu'minin said again, "Learn the science of faraid, the science of nahwu, and the science of hadith as you study the Koran."

Faraid science is one of the most important disciplines in Islam to be studied. In faraid science there are several mathematical concepts, namely the concept of rational numbers. Pay attention to the verses regarding inheritance in the Koran, especially verses 11, 12 and 176 in Surah An-Nisaa '. Allah SWT. in such detail explains the distribution of inheritance for each heir, namely one-half, one-fourth, one-eighth, two-thirds, one-third, one-sixth, and so on. Abu Musa al-Ash'ari ra. said,

"The parable of the person who reads the Qur'an and is not skilled in the science of faraid, is that of a mantle without a hood (Bashori, 2009)."

In the faraid problem, when the result of the sum of *furudhul muqodblood* of the heirs produces a fraction whose numerator exceeds the denominator, the term 'aul appears. 'Aul means to enlarge the denominator so that it is the same as the numerator (Abdussakir & Rosimanidar, 2017). On the other hand, if the result of the sum of *furudhul muqodblood* of the heirs results in a numerator less than the denominator, the term radd appears. Radd means to reduce the denominator so that it equals the numerator (Abdussyakir, 2009).

For example, a person dies leaving behind his husband and 2 sisters. Therefore, the husband's share of and the sister's share of 2 is 2/3. Next, add up each part and get + 2/3 = 3/6 + 4/6 = 7/6. Because the numerator is more than the denominator, we do 'aul, the denominator becomes 7. Thus, the husband's share becomes 3/7 and the share of the two sisters becomes 4/7.

For an explanation of radd, the following example is given.

Suppose a person dies leaving behind a mother and a daughter. The mother's share is 1/6 (because there are children) while the daughter gets. Furthermore, if we add up we get 1/6 + = 1/6 + 3/6 = 4/6. Since the numerator is less than the denominator, we do radd so that the denominator becomes 4 so that the mother's part is and the daughter's part is.

5. Insert relevant verses or hadith

In discussing certain material, you can insert relevant verses or hadiths, for example in discussing social arithmetic, you can insert verses 9 and 10 of Surah Al-Jumu'ah (about commerce) and hadiths about buying and selling. When discussing angles and cardinal maps, the Al-Quran surah Al an'Am verse 96 regarding the circulation of the sun and moon is inserted. When discussing fractions, verses 11 and 12 of Surah An-Nisaa' are inserted regarding procedures for dividing inheritance. Apart from that, you can also include information about zakat levels when learning about zakat.

$$ وَأَقِيمُواْ ٱلصَّلَوٰةَ وَءَاتُواْ ٱلزَّكَوٰةَ وَٱرْكَعُواْ مَعَ ٱلرَّٰكِعِينَ $$

And establish prayer, pay zakat and bow with those who bow' (Q.S Al-Baqarah: 43)

$$ وَكَانَ يَأْمُرُ أَهْلَهُ بِٱلصَّلَوٰةِ وَٱلزَّكَوٰةِ وَكَانَ عِندَ رَبِّهِۦ مَرْضِيًّا $$

And he ordered his experts to pray and pay zakat, and he was a man who was pleased with his Lord (Q.S Maryam: 55).

$$ وَٱلَّذِينَ هُمْ لِلزَّكَوٰةِ فَٰعِلُونَ $$

and those who pay zakat (Q.S Al-Mukminun: 4),

A Muslim who is economically capable is obliged to issue/pay part of his property to those who are entitled to receive it, either through the zakat committee or distributed directly/own. The law of zakat is obligatory if you are financially capable and have reached the minimum limit for paying zakat or what is called nisab. Formulas and examples for paying zakat fitrah to clean oneself and zakat mal or zakat on wealth and professional zakat from income earned from work (Muniri, 2016).

1)   Formula for Calculating Zakat Fitrah

Zakat Fitrah = 2,5 x the market price of rice per liter or per kilogram. When calculating in terms of weight it is 2,5 x the price of rice or local staple foods per kilogram. For example, the price of rice or local staple food that is usually consumed in the market is Rp. 9.000, - the zakat fitrah that must be paid by every capable person is 2,5 x Rp. 9.000, - = Rp. 22.500, -

2)   Formula for Calculation of Professional/Occupational Zakat

Professional Zakat = 2,5% x (Total Income - Payment of Debt or installments). Calculation of Professional Zakat Nisab = 520 x the price of food suitable for consumption (rice/kg).

For example, Mr. Samir receives a salary of IDR 4.000.000 per month and additional income from a food stall is IDR 3.000.000 per month, so his total income is IDR 7.000.000 per month. Mr. Samir also has a debt that must be paid for a car loan installment of IDR 2.000.000 per month. How much professional zakat should Mr. Samir pay?

The solution is to assume that the price of rice that is usually consumed is around Rp. 10.000 per kilogram, so the nisab for zakat is Rp. 5.2000.000. Because Mr. Samir's net income is Rp. 7.000.000, - then it has exceeded the nisab, then Pak Samir has to pay professional zakat of Rp. 5,000,000. - x 2,5% = Rp. 120.000, - in that month. For the following month, it is calculated again according to the latest wealth situation and condition.

3)   Formula for Calculating Zakat Mal (Wealth)

Zakat Maal = 2,5% x Total Assets stored for 1 year (savings and investment). For calculating the nisab of zakat mal = 85 x market gold price per gram.

For example, if Mrs. Tini has a savings in the bank of Rp. 50.000.000, a time deposit of Rp. 30.000.000, and gold and silver is worth Rp. 10.000.000, so her total assets are Rp. 90.000.000. For example, all his assets are 1 year old, if the price of 1 gram of gold is IDR 800.000, the nisab limit for zakat mal is IDR 68.000.000. Because the person's property is more than the nisab, he must pay zakat mal of Rp. 90.000.000 x 2,5% = Rp. 2.250.000 million rupiah per year.

6. History search

The explanation of a competency can be linked to the history of the development of science by Muslim scholars. For example, in discussing integers, the inventor of the number zero can be explained, in the explanation of trigonometry material, the discovery of sines and cosines by Ibnu Jabbir Al Battani, the discovery of the root formula for quadratic equations (known as the ABC formula) in algebra was discovered by Al Khawarizmi, who discovered a number. which can be divided by all the numbers discovered by Ali bin Abu Talib. Or it can also convey about odd and even numbers.

وَٱلشَّفْعِ وَٱلْوَتْرِ

and the even and the odd (Q.S Al-Fajr: 3)

Hajj is one of the pillars of Islam which is done at a certain time and with certain pillars according to the Shari'a. The provisions that apply as conditions and

pillars of Hajj include performing tawaf around the Kaaba 7 times. In this tawaf can be connected with the mathematical concept of a circle. The trajectory for Tawaf because of its activities around it, it can use the concept of the circumference of a circle. The concept of the circumference of a circle can be used to find the distance a person has traveled when performing Tawaf. Circumference of the circle = 2.phi.radius, where the radius is the distance (constant) a person is from the Kaaba.

Phi has 2 types, namely phi = 3,14 and also phi = 22/7. This number also contains odd numbers and even numbers.

Prayer five times a day, 2, 4, 4, 3 and 4. So that must pray 17 cycles.

2 x 4 x 4 x 3 x 4 = 384.

Circumference = thawaf = T

Diameter   = d

Phi   = 22/7

T   = phi*d

               = 22/7 * d

7T   = 22d

If we investigate further, when we check the existence of the 22nd letter in the Al-Qur'an, it is Surah Al-Hajj, and 7 is the number of activities circling the Kaaba while performing the Hajj.

7. Topic network

Relate mathematics to topics in other disciplines. For example, in explaining the discussion about relationships with the food chain, such as chickens eating rice, birds eating insects, or buffalo eating grass, it is related to the sustenance that Allah gives to all His creatures on this earth. Or explaining about the formation of spatial shapes that originate from flat shapes, flat shapes that originate from a line, a line originates from a point, and finally the point originates from a substance created by the Almighty, which until now no one has been able to define a point. , because a point is the secret of Allah SWT. It can also be explained the network of relationships regarding fasting.

People who don't fast during the month of Ramadan don't just stop. However, there are still consequences if you don't do it. Until all treatment becomes fair for all Muslims. Mathematics can also be associated with mathematics. Fasting is refraining from things that can invalidate the fast from sunrise to sunset. From this brief understanding, mathematics can be used in determining the length of fasting. For example, when dawn is rising at 03.56 WIB and sunset (maghrib) at 17.24 WIB, then the length of fasting can be determined by subtracting the time from 17.24 - 03.56 = 16.84 - 03.56 = 13.28, so the length of fasting is 13 hours 28 minutes.

A Muslim who is unable to fast for syar'i reasons, it is permissible to pay fidyah. Some scholars such as Imam As-Shafi'i and Imam Malik stipulate that the size of the fidyah that must be paid to each poor person is one mud of wheat according to the size of the mud taught by the Prophet Muhammad SAW. Mud is the palm of the hand that is raised upwards to accommodate food, such as the position of the palms when people pray. Others, like Abu Hanifa, said two muds of wheat were the size of the mud of the Messenger of Allah S.A.W. or the equivalent of half a sha' of dates or flour, or it can also be equivalent to giving one poor person lunch and dinner until they are full. One mud can be equivalent to 675 grams or 0.688 liters, while 1 sha' is

equivalent to 4 mud. If weighed, 1 sha' weighs 2 x 675 grams = 2700 grams. When measured by volume, 1 sha' is equivalent to 2.7 liters (Zuhdi & Sumaji, 2008).

For example, if a person (male or female) does not fast for 30 days because he is old. The price of one portion of local food is Rp. 10,000, - and the need to eat 1 person is 3 times a day, people must provide a fidyah of Rp. 10,000, - x 3 times = Rp. 30,000, - per day. This means that the person must pay a fidyah of: 30 days x Rp. 30,000, - = Rp. 900,000, -. If you want to issue fidyah with food ingredients, for example rice, then what is issued is

Opinion 1 mud
30 days x 1 mud = 30 days x 675 grams = 20250 grams = 20.25 kg
Opinion 2 young
30 days x 2 mud = 30 days x 2 x 675 grams = 40500 grams = 40.5 kg

In other cases

A mother during Ramadan is pregnant and has not fasted for 25 days because she is worried about the health of her baby, and the price for one serving of food that is usually consumed is Rp. 10.000,-, while the need for food for 1 person/day = Rp. 10.000, - x 3 times = IDR 30.000,-.

It means that the solution is in addition to making up the fast, a mother is obliged to pay a fidiah of: 25 days x Rp. 30.000, - = Rp. 750.000, -

How many kilograms of rice if the mother wants to pay with rice?

8. Symbols of kauniah verses (verses of the universe)

When teaching about rotational symmetry, examples can be given of how God created the regular movement of the moon around the earth and the earth around the sun, or about the rotation of the earth on its axis. When teaching about infinite numbers, it can be related to the amount of sand on the beach or how many liters of sea water on the face of the earth. This or how much air a living creature breathes as long as there is life in this world. There are three main values of the Islamic religion, namely aqidah, sharia (worship, and morals which must be implemented in everyday life in various aspects of human life, both in relationships with God, with fellow humans, and with the natural surroundings. If these values This value can be realized in human life, then perfect humans will be produced (insan kamil) and a dignified life will be created (alim).

$$\text{وَلَبِثُوْا فِيْ كَهْفِهِمْ ثَلٰثَ مِائَةٍ سِنِيْنَ وَازْدَادُوْا تِسْعًا}$$

"And they lived in the cave for three hundred years and an additional nine years (Q.S Al-Kahf: 25)."

In this verse, there is an operation of adding whole numbers, namely 300 years + 9 years = 309 years. Allah also provides information about the differences between the calculations of the Hijriyah and Gregorian calendars. In the Gregorian calendar calculations are based on the rotation of the earth around the sun which takes 365 days in one year.

Meanwhile, the Hijri calculations are based on the rotation of the moon around the earth, which takes 354 days in one year. If the two are connected, then:

AD year = 300 x 365 days = 109,500 days

Hijriyah year = 300 x 354 days = 106,200 days
If the Hijriyah year is multiplied by 309 years, then 309 x 354 days = 109,386 days.

Here we have results from 309 years Hijriyah close to results from 300 years AD. It can be concluded that these young men lived in the cave for 300 years according to the Gregorian calendar and 309 years according to the Hijriyah calendar.

D. CONCLUTION

Based on the explanation above, it can be concluded that mathematics has similarities with fiqh, namely regularity and clear determination. The contribution of mathematics as a science of arithmetic as well as an exact science provides convenience in understanding and practicing most of the science of fiqh. The Qur'an which is a guide for Muslims in practicing the knowledge contained in it has actually given numerical messages such as setting prayer times, determining the levels of zakat fitrah and zakat on property, fasting, fidiah, hajj, and faraid. The relationship between mathematics and fiqh makes mathematics able to serve science in other fields, especially in the field of fiqh.

BIBLIOGRAPHY

A'yunin, N. Q., Achdiyat, & Saridewi, T. R. (2020). Preferensi Anggota Kelompok Tani Terhadap Penerapan Prinsip Enam Tepat (6T) Dalam Aplikasi Pestisida. *Jurnal Inovasi Penelitian*, *1*(3). https://doi.org/https://doi.org/10.47492/jip.v1i3.73

Abdussakir, & Rosimanidar. (2017). Model Integrasi Matematika dan Al-Quran serta Praktik Pembelajarannya. *Build a Competitive and Intellectual Young Mathematician Through Mathematics Competition and Integrating Islamic Values in Mathematics Learning*.

Abdussyakir. (2009). *Matematika 1 (Kajian Integratif Matematika & Alquran)*. UIN Malang Press.

Admin. (2017). *Tokoh Ilmuwan Matematika dalam Peradaban Islam*. https://math.uin-suska.ac.id/tokoh-ilmuwan-matematika-dalam-peradaban-islam/

Agustina, W., Hamengkubuwono, & Syahindra, W. (2020). Model Pembelajaran Pendidikan Agama Islam Di Sekolah Umum. *At-Ta'dib: Jurnal Ilmiah Prodi Pendidikan Agama Islam*, *12*(2), 112–126.

Arik, A. (n.d.). *Beyond Probability: God's Message in Mathematics*. 2013. Retrieved January 22, 2020, from http://numerical19.tripod.com/Beyond_Probability.htm

Arroisi, J., & Sa'adah, H. (2020). Secularization of Education and ITS Implication on Learners. *At-Ta'dib*, *15*(2). https://doi.org/10.21111/at-tadib.v15i2.5051

Bashori, S. (2009). *Al Faraidh (Hukum Waris)*. Nusantara.

Fatkhurahman. (2016). Kepuasan Berwirusaha Melalui Kemauan Untuk Berkarya Usaha Industri Kecil. *JEBI (Jurnal Ekonomi Dan Bisnis Islam)*, *1*(2). https://doi.org/10.15548/jebi.v1i2.31

Firdaus, A. S. (2001). *Salat dalam Tinjauan Matematika*. Media Pembinaan.

Gie, T. L. (1985). *Filsafat Matematika*. Supersukses.

Gradini, E., Wahyuni, S., & Ansor. (2017). Efektivitas Penerapan Pembelajaran Matematika Qur'ani Dalam Pembelajaran Himpunan. *Al Khawarizmi: Jurnal Pendidikan Dan Pembelajaran Matematika*, *1*(1). https://doi.org/http://dx.doi.org/10.22373/jppm.v1i1.1728

Hidayatullah. (2019). *Fiqih*. Universitas Islam Kalimantan Muhammad Arsyad Al-Banjari.

Huda, M. T., & Maghfiroh, I. A. (2019). Pluralisme Dalam Pandangan Pemuda Lintas Agama di Surabaya. *Satya Widya: Jurnal Studi Agama*, *2*(1).

Ibrahim. (2015). *Metodologi Penelitian Kualitatif*. Alfabeta.

Ibrahim, D. (2019). *Al-Qawaìd Al-Fiqhiyah (Kaidah-Kaidah Fiqih)*. CV. Amanah.

Imaduddin, K., Hartoyo, A., & Nursangaji, A. (2021). Eksplorasi Konsep Matematika Dalam Fikih Thaharah Madzhab Imam Syafi'i. *Khatulistiwa: Jurnal Pendidikan Dan Pembelajaran*, *10*(2).

Komara, E. (2012). *Penelitian Tindakan Kelas Dan Profesionalisme Guru*. Refika Aditama.

Masykur, M. R. (2019). Metodologi Pembelajaran Fiqih. *Jurnal Al-Makrifat*, *4*(2).

Maullasari, S. (2019). Metode Dakwah Menurut Jalaluddin Rakhmat Dan Implementasinya Dalam Bimbingan Dan Konseling Islam (BKI). *Jurnal Dakwah*, *20*(1). https://doi.org/10.21580/jid.v38.1.3975

Muniri. (2016). Kontribusi Matematika dalam Konteks Fiqih. *Ta'allum*, *4*(2). https://doi.org/https://doi.org/10.21274/taalum.2016.4.2.193-214

Nurhayati. (2018). Memahami Konsep Syariah, Fiqih, Hukum Dan Ushul Fiqih. *J-HES Jurnal Hukum Ekonomi Syariah*, *2*(2). https://doi.org/https://doi.org/10.26618/j-hes.v2i2.1620

Puadi, E. F. W. (2017). Kajian Matematika Islam (tinjauan konsep aritmatika al-Uqlidisi). *Jurnal Matematika Ilmiah STKIP Muhammadiyah Kuningan*, *3*(1).

Sasmita, F. E. (2018). Eksplorasi Al-Quran Surah An-Nisaa Dalam Mentransformasi Matematika SD Yang Penuh Nilai. *JPGSD*, *6*(4).

Setiawan, H. R. (2015). Kontribusi Al-Khawarizmi Dalam Perkembangan Ilmu Astronomi. *Al-Marshad: Jurnal Astronomi Islam Dan Ilmu-Ilmu Berkaitan*, *1*(1). https://doi.org/http://dx.doi.org/10.30596%2Fjam.v1i1.740

Siagian, M. D. (2017). Pembelajaran Matematika Dalam Persfektif Konstruktivisme. *Nizhamiyah: Jurnal Pendidikan Islam Dan Teknologi Pendidikan*, *7*(2). https://doi.org/http://dx.doi.org/10.30821/niz.v7i2.188

Sinaga, O. S., Hasibuan, A., Efendi, E., Priyojadmiko, E., Butarbutar, M., Purba, S., Karwanto, Silalahi, M. A., Hidayatulloh, N., & Muliana. (2020). *Manajemen Kinerja dalam Organisasi*. Yayasan Kita Menulis.

Sulistyawati, E. (2018). Pembelajaran Matematika Dengan Pendekatan Konstekstual Berbasis Budaya Lokal Untuk Siswa Sekolah Menengah Pertama. *Factor M: Focus ACTion Of Research Mathematic*, *1*(1).

Suyitno, & Hardi. (2014). *Pengenalan Filsafat Matematika*. FMIPA UNS.

Zuhdi, M. N., & Sumaji, M. A. (2008). *125 Masalah Puasa*. Tiga Serangkai.