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Analysis of Islamic Value-Integrated Mathematics Learning: Efforts to Form Prospective Mathematics Teacher with Religious Character

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Abstrak

Penelitian ini menerapkan mixed methods dengan desain embedded experimental. Tujuan penelitian untuk mendeskripsikan implementasi pembelajaran matematika terintegrasi nilai Islam dalam membentuk karakter religious mahasiswa, dan menguji adanya pengaruh karakter religious dan motivasi terhadap prestasi belajar mahasiswa dalam pembelajaran matematika terintegrasi nilai Islam. Partisipan penelitian terdiri dari seorang dosen, seorang observer, dan 35 mahasiswa calon guru matematika. Pengumpulan data diperoleh melalui wawancara, angket, tes, dan observasi. Data kualitatif dianalisis secara deskriptif dan data kuantitatif dianalisis melalui uji korelasi dan ANOVA. Hasil penelitian menyimpulkan bahwa implementasi pembelajaran matematika terintegrasi nilai-nilai Islam dalam rangka mengembangkan karakter religious terdiri tiga tahap yaitu: tahap penanaman nilai, tahap implementasi, dan tahap reflection. **I**mplementasi pembelajaran matematika terintegrasi nilai Islam telah membentuk mahasiswa memiliki karakter religious dan mampu mengingat 4 – 5 ayat Al Quran dan maknanya. Analisis inferensi menunjukkan terdapat korelasi antara variable religious charater dan motivation terhadap prestasi belajar. Ketiga variable memiliki hubungan searah (positif). Hal ini berarti, apabila religious charater dan motivation semakin tinggi maka prestasi belajar semakin tinggi (mengalami kenaikan). Secara simultan variable karakter religious dan motivasi berpengaruh signifikan terhadap variable prestasi belajar.
Kata Kunci: Guru Matematika; Karakter Religius; Nilai Islam; Prestasi Belajar.

Abstract

This study applies mixed methods with an embedded experimental design. The research objectives were to describe the implementation of Islamic values integrated mathematics learning in shaping students' religious character, and examine the influence of religious character and motivation on student achievement in learning mathematics integrated with Islamic values. The research participants consisted of a lecturer, an observer, and 35 students. Data collection was obtained through interviews, questionnaires, tests, and observation. Qualitative data were analyzed descriptively and quantitative data were analyzed through correlation tests and ANOVA. The results of the study concluded that the implementation of integrated mathematics learning with Islamic values in order to develop religious character consisted of three stages, namely the value instillation stage, the implementation stage, and the reflection stage. The implementation of learning mathematics integrated with Islamic values has formed students who have religious character and are able to remember 4-5 verses of the Koran and their meanings. Inference analysis shows that there is a correlation between religious character and motivation variables on learning achievement. The three variables have a unidirectional (positive) relationship. This means, if the religious character and motivation are higher, the learning achievement will be higher (increase). Simultaneously the variables of religious character and motivation have a significant effect on the learning achievement variable.
Keywords: Islamic Value; Learning Achievement; Mathematics Teacher; Religious Character.

I. INTRODUCTION

Character education is an effort to instill good habits so that students can behave and act based on the values that have become their personality. Mathematics subjects can instill character education (Rizal et al., 2023; Rusydiyah et al., 2023). Mathematics can help shape students' character to be disciplined, independent, honest, hard-working, curious, creative, and responsible (Amir, 2022; Latifah et al, 2022).

From an Islamic perspective, education, or in a narrower scope is learning, is a means to form people who have noble character by instilling good values originating from religious teachings (Al Qur'an and Hadith) in learning activities. Likewise in learning mathematics, it can also be used as a means to instill the good values contained in the Al-Quran of course (Choirudin et al., 2021), for the implementation of integrated mathematics learning with Islamic values, it is necessary to prepare the lesson carefully by the teacher (Abdullah et al., 2021).

So far, the idea of the integration of mathematics (science) and religion still tends to be a discourse. There is no concrete evidence yet to show that mathematics (science) and religion are integrated or can be integrated. We (researchers) want to provide evidence that mathematics (science) and religion are actually integrated and there is no dichotomy between the two, especially mathematics and the Qur'an.

Mathematics is closely related to the verses of the Quran, so studying it can help in the formation of Islamic character education. In addition, mathematics, which is quite complicated, requires special treatment in its learning, which can bring out Islamic character (Mahmudah et al., 2022).

Islamic character mathematics education is a mathematics teaching and learning process that integrates Islamic values to form positive student character. Islamic characters formed through mathematics learning include honesty, patience, accuracy, and precision (Bahri et al., 2022). Therefore, mathematics learning can be designed based on religious character so that students are more comfortable participating in it.

Teachers are key in determining the quality of education; therefore, they must have high motivation to teach and adequate skills in carrying out their duties. Even in religious practices, Muslims are introduced to and required to understand mathematics. “God created mathematics as the language of the universe. This means that a Muslim needs to master mathematics because carrying out religious worship involves a lot of mathematical calculations (Doño & Mangila, 2021).

Islam places teachers or educators in a noble position. Educators are positioned as spiritual fathers for students. The teacher provides spiritual food with knowledge and fosters noble character and straightens it out. Therefore the teacher must have a religious character as a role model and always be positioned as a motivator for his students (Arthur et al., 2022; Doño & Mangila, 2021).

Religiosity is how far the knowledge is, how solid the belief is, how much the implementation of worship and rules is, and how deep the appreciation of the

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religion one adheres to. (Soto-Sanfiel & Mäder, 2020).

Efforts to integrate Islamic and mathematical values in learning can be realized through three stages (Choirudin et al., 2021; Mahmudah et al., 2022) namely: (a) curriculum integration includes integrating divine values in all subject matter, starting from the formulation of competency standards, the implementation of learning to the evaluation of learning; (b) the integration of learning through instilling motivation and views of the Koran on mathematics (science) to students during the learning process; and (c) the integration of knowledge is a product resulting from the two integrations that have been attempted previously, namely the integration of curriculum and learning. The following presents an integrated mathematics learning design with Islamic values in Table 1.

The success of student learning in the learning process is strongly influenced by the motivation that is in him (Istiqlal & Jumadi, 2018). Motivation to learn is a boost to oneself and the environment in students who experience the learning process to make changes in behavior (Doño & Mangila, 2021). With this motivation, students can develop activities and initiatives so as to direct and maintain perseverance in learning. The indicators of learning motivation that is the focus of this research are (a) there is a desire and hope for success; (b) there is encouragement and need in learning; (c) there are hopes and aspirations for the future; (d) there is an appreciation in learning; and (e) there are interesting activities in learning (Sudihartinih, 2019). According to experts, motivation will provide encouragement, direction, and actions to be taken in an effort to achieve the goals that have been formulated (Doño & Mangila, 2021).

Table 1.
The design of integrated mathematics learning with Islamic values

Learning Stage	Learning Activities	Integration of Islamic values
Early stage: Cultivating Values	Implementation of initial activities carried out through: (1) Explain in general the learning model that will be implemented; (2) Explain the objectives to be achieved and the activities to be carried out; (3) Conveying topics to be discussed in learning	At this stage, the lecturer facilitates students with activities that are able to raise awareness of the importance of moral values, and character in learning. The following activities can be carried out at this stage, namely: Starting the lecture by saying the opening greeting: Assalamu'alaikum, Basmallah, Asmaul Husna, and studying prayers.(Inganah & Rizki, 2023)
Core Stage: Implementation	The following are things that are considered in the core activities of integration learning: (1) Provide theme-related stimuli to encourage students to be active; (2) Submission of material must use the right order according to the stages of student thinking; (3) Doing clarification to see the	At this stage, the lecturer facilitates students with various learning activities that can grow Islamic character values. Implement various learning models that encourage students to actively solve problems such as discovery learning, problem-based learning, or group investigation. Associating the material studied with meaning according to Islamic values

Learning Stage	Learning Activities	Integration of Islamic values
	findings of ideas in learning and students' responses to the learning process; (4) the emphasis on integration, namely efforts to unify students' understanding of the links between integrated material concepts.	For example, Islamic values that are integrated with descriptive statistical material include: QS: Al-Kahf verse 49; QS: Abraham verse 7; QS: As-Syu'ara verse 181 – 182; QS: Al Isra verse 1 Giving meaning to the material is very important so that what is learned does not only stop at mere knowledge but can also affect the attitudes and souls of students. (Inganah & Rizki, 2023)
Closing Stage: *Reflection*	Final Activities Final activities in integrated learning are carried out with the aim of (1) Focusing students' attention; (2) Summarize the problem; (3) Consolidating students' attention; (4) Organizing all activities that have been carried out; (5) Performing work in accordance with the experience that has been obtained; (6) Reflect and evaluate.	At this stage, lecturers and students together reflect on the character values that are felt, grow, and develop in students in learning. The lesson was closed by reading the closing prayer of the assembly and saying Hamdallah. The aim is that the values of the Islamic character have not yet grown, it is hoped that in the next lesson, students will be motivated to improve themselves. (Inganah & Rizki, 2023)

The questions posed in this study are (a) how is the implementation of mathematics learning integrated with Islamic values in shaping the religious character of future mathematics teachers? (b) is there an influence between religious attitudes and motivation on the learning achievement of mathematics teacher candidates who participate in Islamic values-integrated mathematics learning?

The results of this study are useful for educators (mathematics teachers) in the form of knowledge about (a) the absence of a dichotomy between science (mathematics) and religion (Islamic values); (b) the application of integrated mathematics learning with Islamic values is effective in shaping students' religious character; and (c) the formation of Islamic (religious) character can motivate students to study seriously so as to increase learning achievement.

II. METHOD

This study applies mixed methods with an embedded experimental design. Mixed research is a research method that combines qualitative research with quantitative research (Creswell & Clark, 2018). Embedded experimental design is a mixed research design that involves data collection and qualitative data analysis in an experimental design.

Participants in this study consisted of a senior lecturer with expertise in statistics, a learning observer, and 35 students (mathematics teacher candidates). These students are students who are taking a descriptive statistics course in semester 2. Lecturers carry out lectures using a problem-based learning model that integrates Islamic values. The Observer is in charge of observing lecturers and students during the lecture process. After attending lectures students complete written tests and students fill out questionnaires about the implementation of problem-based

mathematics learning that integrates Islamic values.

The collection of research data was obtained through interviews, questionnaires, tests, and observation. The interview instrument contains 5 semi-structured questions. Interview documentation was taken through an audio-visual recording device. The religious character questionnaire contains 10 closed questions (Fitriani & Fibriana, 2020). The learning motivation questionnaire contains 20 closed questions that have been developed by previous experts (Ferland et al., 2024).

The written test instrument consists of 5 questions about descriptive statistics, namely the material for measuring the concentration of data and measuring the distribution of data. The observation sheet in the form of a checklist is used to confirm the implementation of integrated mathematics learning with Islamic values.

The validity of test items and questionnaires (religious character and motivation) were tested using the Pearson Product Moment technique. The results of the questionnaire validity test showed that the r value was more than .30 (valid). The reliability coefficient uses Cronbach's alpha analysis technique. The reliability test of test items and questionnaires (Q.1 and Q.2) obtained a reliable coefficient of 0.76; 0.74; and 0.80 meets the standard of instrument reliability so that the instrument can be used as a data collection tool (Taber, 2018).

The procedure for implementing this research was carried out in 4 stages (see Figure 1). The priority of the embedded experimental model design is built qualitatively while the quantitative data sets are subject to experimental studies (Creswell,2014).

The qualitative and quantitative data were collected in the embedded experimental model design to answer research questions that require different types of data. The complete embedded experimental model design scheme adapted from Creswell (2014) is presented in Figure 1.

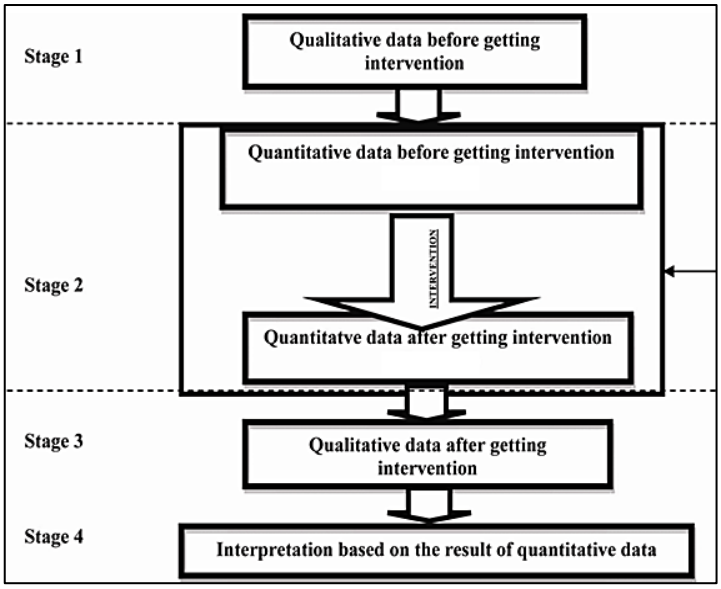

Figure 1. Embedded experimental research procedures (Creswell, 2014)

In the first stage of data analysis, researchers conducted data analysis separately for qualitative data or quantitative data. Qualitative data from the interviews were analyzed descriptively through coding, theme development, and the relationship between themes.

Research with this embedded experimental method emphasizes more on quantitative methods. Quantitative data from the questionnaire were measured using a Likert scale (Kusmaryono et al., 2022) and analyzed through statistical inference tests, namely correlation tests and multiple linear regression statistical tests with ANOVA (Keck et al., 2023; Midway et al., 2020). Data from learning observations were analyzed descriptively to ensure the suitability and applicability of each stage of implementation of Islamic values integrated mathematics learning.

The second stage of data analysis is data merging. The process of merging the two data occurs when the researcher links the collection of quantitative data with the analysis of qualitative data. Qualitative data is used to explain quantitative data. Combining qualitative and quantitative data aims to compare data and find information whether the two data support or contradict each other (Borgstede & Scholz, 2021).

To increase the credibility of the results of this study, we (researchers) conducted data analysis through technical triangulation and data source triangulation (Campbell et al., 2020). Technical triangulation is done by comparing data from interviews, questionnaires, observations, and test results. Meanwhile, source triangulation was carried out through Forum Group Discussions (FGD) between researchers, expert teams, and teachers.

III. RESULT AND DISCUSSION

A. Results

Research implementation has been carried out according to research procedures strictly. In the first stage, the researcher collected qualitative data through interviews with students (mathematics teacher candidates). This initial interview was conducted before there was an intervention in mathematics learning integrated with Islamic values.

The interview was repeated in the third stage when students had attended lectures with Islamic values integrated mathematics learning interventions. Interviews were conducted for the purpose of obtaining data on religious character and student learning motivation.

The interview was conducted in a semi-structured manner, combining structured and unstructured interviews. It followed a predetermined framework of questions, but the interviewer had the freedom to explore the topic in more depth. Interview data that meets the criteria and is by the interview objectives are tabulated in a table and then coded. Coding is a way of indexing or categorizing text to build a thematic framework of ideas about the text. In qualitative research, coding is "how you define the data you analyze" In the following, Tables 2 and 3 are presented which summarize the interview transcripts before and after the Islamic values integrated mathematics learning intervention.

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Table 2.
Transcript of conversations about religious characters before and after the intervention

Questions	Code	Respondents Answer	
		Before Intervention	After Intervention
Does the habit of reading, learning, prayer, and the Quran have a positive impact on you?	Q-1	I only read Basmallah	For me, it has a very positive impact. Because it will increase faith in Allah SWT. I feel comfortable and learning concentration.
Can learning mathematics improve religious attitudes and the practice of religious worship?	Q-2	I don't understand the relationship between mathematics and Islamic values, including practicing religion.	I feel there is an increase in religious worship after understanding that the Koran contains complete mathematics.
Do you understand that the Qur'an contains scientific knowledge and social attitudes?	Q-3	I don't understand deeply about it.	I understand the content of the contents of the Al-Quran consists of faith, worship and Muamalah, law, history, morals, and science.
In your opinion, are there character values in learning mathematics that you feel?	Q-4	Explicitly there is no Islamic character value, there is only a procedure for solving mathematical problems.	Explicitly there are Islamic character values in learning mathematics: religion, conscientiousness, responsibility, obedience to principles, and honesty.
What do you get after the character values are applied in Islamic values-integrated mathematics learning?	Q-5	Not integrated in learning mathematics.	I understand the relationship between mathematics and the verses of the Koran.

Motivation in learning mathematics is important because it is one of the determinants of learning success. Motivation to learn mathematics can be interpreted as the drive that arises in students to enthusiastically carry out mathematics learning activities and the desired goals. High learning motivation can help students to (a) Achieve maximum learning outcomes, (b) set targets or goals that have been planned, and (c) Have a lot of energy to carry out learning activities. To increase learning motivation, students can make several changes or habits in learning to create space for active and creative learning. Religious motivation is the drive that drives someone to carry out behavior related to divinity, appreciation, and practicing religious teachings. Meanwhile, the religious character is the values adhered to by someone based on religious provisions and provisions. The following is Table 3 regarding learning motivation conversation data.

Table 3.
Transcript of conversations about learning motivation before and after the intervention

Questions	Code	Respondents Answer	
		Before Intervention	After Intervention

Questions	Code	Respondents Answer	
		Before Intervention	After Intervention
What are your efforts to succeed in learning mathematics?	Q-1	I studied diligently although I did not always succeed in getting good grades in mathematics.	I don't give up easily when I have difficulty learning math. I agree that to be successful requires study, hard work, and patience.
Do you study math outside of school hours?	Q-2	I do not study mathematics other than at school. I have never succeeded in learning mathematics without a teacher.	I am motivated to study math material repeatedly and look for other sources on the internet if I don't understand when the teacher explains it because learning is my personal need.
Are you sure studying math will support your future goals?	Q-3	I thought that without mathematics I would be able to work in other fields not related to mathematics.	I believe that all work is related to mathematics. Studying math gives me better reasoning about future goals.
What is the role of the math teacher in supporting your learning motivation?	Q-4	The math teacher only gives procedures for solving problems, and the others give math assignments.	I'm not ashamed to ask the teacher if I don't understand math.
Is learning math interesting and fun?	Q-5	It's normal, only occasionally learning math becomes interesting, but I don't understand the benefits of learning math	Learning math is very fun. I am interested in learning the contents of the Quran. Apparently, mathematics is integrated with Islamic values in the book of the Quran.

Implementation of the second phase of research, researchers collected quantitative data through questionnaires. The questionnaire consists of two types, namely the religious character questionnaire and the learning motivation questionnaire. Questionnaires were given to students before and after the Islamic values integrated mathematics learning intervention. The following presents a statistical description (Tables 4 and 5) of the results of the religious character questionnaire and the learning motivation questionnaire before and after the Islamic values integrated mathematics learning intervention.

Table 4 shows that there is a significant difference in the mean score between students' religious characters before and after learning mathematics integrated with Islamic values.

Table 4.
The statistical description of the results of the religious character questionnaire

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Religious_Before	35	1.00	2.50	3.00	2.9586	.28786
Religious_After	35	.60	3.20	3.80	3.5871	.13358
Valid N (listwise)	35					

In Table 4, the mean scores of religious characters before students take part in mathematics learning integrated with Islamic values are in the "medium"

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category and the mean scores for religious characters after students take part in integrated mathematics lessons in Islamic values are in the "very high" category.

Table 5.
The statistical description of the results of the learning motivation questionnaire

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Motivation_Before	35	.70	2.80	3.50	3.1943	.18778
Motivation_After	35	.70	3.10	3.80	3.5600	.11428
Valid N (listwise)	35					

Table 5 shows that there is a difference in the mean score between students' learning motivation. The mean score of learning motivation before students take part in mathematics learning integrated with Islamic values is in the "high" category and the mean score of learning motivation after students take part in integrated mathematics learning is Islamic values in the "very high" category.

The second phase of the research implementation is the observed intervention stage, where this stage is the core of the implementation of integrated mathematics learning with Islamic values. The lecture material being discussed is descriptive statistics with integrated Islamic values (see Table 6).

Table 6.
Implementation of learning descriptive statistics integrated with Islamic values

Statistics Material	Integration in the Quran	Description of Relationship With mathematics	Religious Dimension
Mode	QS: Al-Kahfi, verse 49. (Kementerian Agama R.I, 2010)	The letter in the Koran explains that all the good and bad done by every human being will be recorded, not left behind. All records or data collected will determine whether a person enters heaven if there is a lot of good or hell if there is a lot of bad.The context used in the verse is descriptive statistics about the mode (values that appear frequently) and the mode, namely good or bad.	Religious Appreciation
Median	QS: As-Syu'ara, verse 181 – 182. (Kementerian Agama R.I, 2010)	In the letter as-Syu'ara verses 181-182, it is explained that we must have honesty in trading. You can't cheat in weighing, meaning you can't be one-sided, which means you have to be balanced. The context used in the verse is descriptive statistics about the size of the median or middle value. In statistics, it means that we must have accuracy in calculating data so that the results obtained are accurate.	Religious Practices and Rules

Statistics Material	Integration in the Quran	Description of Relationship With mathematics	Religious Dimension
Range	QS: Al Isra, verse 1. (Kementerian Agama R.I, 2010)	Surah Al Isra verse 1, explains that (Allah), has driven His servant (Muhammad) at night from the Grand Mosque to the Aqsa Mosque. In the Al-Quran, verses containing the Grand Mosque (Ka'bah) and Al-Aqsa Mosque are separated by 767 verses; it turns out that geographically they are 767 miles apart. The context used in the verse is descriptive statistics about the range (reach - distance). In statistics, it means that we must have accuracy in calculating data so that the results obtained are accurate.	Belief
Varians	QS: Al-Hujurat, verse 13. (Kementerian Agama R.I, 2010)	This Surah of the Qur'an explains that Allah SWT has actually created humans from a male and a female. Then, Allah SWT made people into nations and tribes so that people know each other. Indeed, the most honorable among humans in the sight of Allah is the most pious, and indeed Allah is all-knowing, all-observant. The context used in the verse is descriptive statistics abaut of Varians.	Experience and Consequences

At the end of the implementation of learning mathematics integrated with Islamic values, students complete a formative test. The formative test consists of 5 questions about the problem of measuring data concentration and measuring data distribution. Formative test results are shown in Table 7.

Table 7.
The student of learning achievement scores

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Achievement	35	15.00	75.00	90.00	84.862	5.60507
Valid N (listwise)	35					

At the end of the implementation of integrated Islamic values mathematics learning, students completed a formative test. The test consisted of 5 questions about the problem of data centralization measures and data dispersion measures. The results of the formative test are shown in Table 8.

Table 8.
The student of learning achievement scores

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Achievement	35	15.00	75.00	90.00	84.862	5.60507
Valid N (listwise)	35					

The results of the data analysis in Table 8 show that the range of values is not large enough, namely between the minimum value and the maximum value. With a

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standard deviation of 5,605, the actual average value is between (84,862 – 5,605) to (84,862 + 5,605). The acquisition of an average score of 84.2286 is included in the "very good" learning achievement category.

Implementation of the fourth stage of research, researchers have obtained quantitative data in Tables 4, 5, and 7. Based on the data (Tables 4, 5, and 7) researchers conducted correlation tests and multiple linear regression statistical tests to determine the influence of the independent variable on the dependent variable. Prior to the linear regression test, a correlation test was performed. The test results can be seen in Table 9.

Table 9.
Correlation between research variables

Correlation		Religious Character	Motivation	Learning Achievement
Religious Character	Pearson Correlation	1	.753**	.746**
	Sig. (2-tailed)		.002	.005
	N	35	35	35
Motivation	Pearson Correlation	.753**	1	.710**
	Sig. (2-tailed)	.002		.000
	N	35	35	35
Learning Achievement	Pearson Correlation	.746**	.710**	1
	Sig. (2-tailed)	.005	.000	
	N	35	35	35

In the output table (Table 9) the value of Sig. (2-tailed) between religious character and Learning Achievement is 0.005 < 0.05 so it is stated that there is a correlation between religious character variables and learning achievement. Sig. Value (2-tailed) between Motivation and s with learning achievement of 0.000 < 0.05, which means there is a correlation between motivational variables and learning achievement variables. Next, the value of Sig. (2-tailed) between motivation and religious character is 0.002 < 0.05, which means there is a correlation between the motivational variable and the religious character variable.

Table 10.
Regression coefficient of independent variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.585	44.035		.604	.005
	Religious_After	6.376	7.371	.152	.865	.034
	Motiv_After	9.857	8.616	.201	12.144	.026

a. Dependent Variable: Achievement

Based on the results of Table 10, a multiple linear regression equation can be formed, namely: Y = 26,585 + 6,376X1 + 9,857X2. Meanwhile, based on the summary model output, the values of R = 0.872 and R^2 = 0.760 are obtained, this means that 76% of the variance of the dependent variable can be explained by the

independent variable through the linear equation. In other cases, it can be said that 34% of the independent variable has not been able to explain the variance of the dependent variable.

Table 11.
Description of Statistics in the ANOVA Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	554.858	2	127.429	23.866	.043[b]
	Residual	113.313	32	31.666		
	Total	668.171	34			

a. Dependent Variable: Achievement

b. Predictors: (Constant), Motivation_After, Religious_After

The calculated F-value is 23.866 with a probability value (Sig.) = 0.043 (see Table 11). The significance value of 0.043 is smaller than 0.05 which implies that, simultaneously the variable of religious character and motivation has a significant effect on the learning achievement variable for a significant level of 5% with a linear equation $Y = 26.585 + 6.376X_1 + 9.857X_2$.

B. Discussion

1) The implementation of mathematics learning is integrated with Islamic values and religious characters

The implementation of integrated mathematics learning with Islamic values has been carried out by lecturers during 3 learning meetings. In the first meeting, the lecturer presented material (descriptive statistics) on the size of central symptoms and discussion. In the second meeting, the lecturers presented material on measuring data distribution and discussion. In the third meeting, students presented the results of group assignments and discussions. The results of observing learning observers reported that learning runs interactively and is based on problem-solving. The implementation of Islamic values-integrated mathematics learning starts from the initial stage (inculcation of values), the core stage (implementation), and the final stage (reflection) in accordance with the plan (see Table 6).

Based on the results of the interview conversations (see Table 2: Q-2, Q-4, and Q-5), students revealed that (before the intervention) mathematics learning was more focused on problem-solving procedures and had not integrated Islamic values. However, (after the intervention) through learning descriptive statistics integrated with Islamic values they were able to understand the relationship between mathematics and the verses of the Quran (see Table 6). Students are more confident and confident when learning mathematics. They feel that there is an increase in their faith in Allah SWT, and the practice of worship, and the consequences of acting according to Islamic rules. This statement shows that Islamic values (religious character) have been embedded in their souls and attitudes in everyday life. Evidence from the results of the questionnaire (see Table 4) also shows that there is an increase in religious character after students (prospective teachers) take part in mathematics learning integrated with Islamic values.

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The result of the integration of general science and religion for students (mathematics teacher candidates) is that students are able to fully understand knowledge not only in general science but also in the field of religious science, students are enthusiastic to learn and study knowledge according to the Qur'an, students are able to think critically, and students experience an increase in religious character (Istiqlal & Jumadi, 2018). Learning mathematics integrated with Islamic values makes students understand organized and in-depth, students can understand the relationship between mathematical material and the Koran and students have a noble and religious character (Choirudin et al., 2021). Based on the results of a further investigation after learning mathematics integrated with Islamic values for one semester, information was obtained that students were able to remember 4-5 verses of the Al-Quran and their meanings (see Table 6).

2) The implementation of mathematics learning is integrated with Islamic values and learning motivation

Based on the results of the interview conversation (see Table 3: Q-2, Q-4, and Q-5), it was revealed that (before the intervention) being smart or proficient in mathematics was not sure that it could guarantee students success in the future.

The level of student interest in learning mathematics is normal, only occasionally learning mathematics becomes interesting. They don't understand the benefits of learning math other than to succeed in their final exams. However, (after the intervention) through learning descriptive statistics integrated with Islamic values they stated that learning mathematics was very enjoyable. They are motivated to study the contents of the Al-Quran. They have a better understanding and reasoning about future goals.

The success of student learning in the learning process is strongly influenced by the motivation that is in him. The existence of good motivation in the learning process will also get good results. In other words, if there is diligent effort and based on strong motivation, then someone who studies will get good achievements (Hendrawan & Hendriana, 2021; Siregar & Andika, 2020).

3) The influence of religious character and motivation on mathematics learning achievement

Religious character or attitude is a basic standard that must be possessed by a Muslim, including prospective mathematics teachers. A math teacher who has a high religious attitude will develop other good characters. For example, being patient, honest, serious, consistent, critical thinking, and responsible, diligent, never giving up on completing assignments so that learning achievement is satisfying (Masduki et al., 2015; Afriansyah, Herman, & Dahlan, 2020).

Some research results show that learning motivation has an effect on student learning outcomes. The higher motivation that students have will encourage students to study even harder and the frequency of learning will increase, so that student achievement also increases (Arthur et al., 2022; Doño & Mangila, 2021). So, the existence of motivation will provide encouragement, direction, and actions to be taken in an effort to achieve maximum learning achievement.

The results of the correlation test between the variables of religious character and motivation on learning achievement (Table 8) show that the three variables show a unidirectional (positive) relationship. This means, if the religious character and motivation are higher, the value of learning achievement will be higher (increase). Meanwhile, Table 10 shows that simultaneously the variables of religious character and motivation have a significant effect on the learning achievement variable for a significant level of 5% with the linear equation $Y = 26.585 + 6.376X_1 + 9.857X_2$ (see Table 9).

Based on the group discussion forum it was concluded that religious values are felt to be very important for students (prospective teachers) because they can grow faith and provide encouragement and direction in behavior. Religious values also play a role in increasing motivation and guiding students (prospective teachers) to achieve very high and satisfying learning achievements (see Table 7). On the other hand, the success of teachers conducting studies on integration between mathematics and Islamic religious education is if teachers can integrate Islamic values from each mathematical concept. Through the integration of Islamic values in mathematics, of course, it will be easier for teachers to develop by combining Islamic values contained in every process of learning mathematics.

IV. CONCLUSION

The implementation of integrated mathematics learning with Islamic values in order to develop religious character consisted of three stages. The first stage (Instilling Values) is when the lecturer raises awareness of the importance of moral values and character in learning where the lecturer starts the lecture by saying the opening greeting: "Assalamu'alaikum", then reads Basmallah, Asmaul Husna, and a study prayer. The second stage (Implementation) is that the lecturer facilitates students with various learning activities that explicitly link lecture material with meaning according to Islamic values (verses in the Koran). The giving of meaning in a material is very important so that what is learned does not only stop at mere knowledge but can also affect the attitudes and behavior of the religious character of students. In the third stage (Reflection), lecturers and students reflect on the character values that grow and develop in learning. The lesson was closed by reading the closing prayer of the assembly and saying Hamdallah. The results of interviews with students obtained data that students gave a positive response to the implementation of integrated mathematics learning applied to Islamic values. They state that the explicit integration of Islamic values has encouraged them to behave well and have religious character and they are even able to remember 4-5 verses of the Al-Quran and their meanings.

The correlation between the religious character and motivation variables on learning achievement shows a unidirectional relationship (positive). This means that if the religious character and motivation are higher, the learning achievement value will be higher (increase), and simultaneously, the religious character and motivation

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variables significantly affect the learning achievement variable.

As a suggestion, teachers and prospective teachers need to continue to develop and analyze mathematical material by linking verses in the Koran. Al-Quran is the source of all sources of knowledge that every human being can take wisdom from and learn through mathematics. In future research, it is necessary to examine the correlation between religious character and students' self-confidence in learning mathematics.

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