

The effectiveness of the islamization of science curriculum on students' acquisition of science processes and increase motivation towards learning science

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ABSTRACT

The current study investigates the effectiveness of the Islamization of the science curriculum in developing students' science processes and enhancing their motivation towards learning science. Science Quotes from the Holy Qur'an were used to frame the process of re-designing the science curriculum to be consistent with the Islamized curriculum. The study employed an experimental research design. The sample of the study is 30 Jordanian seventh-grade students who were selected randomly. The students were divided into two groups. The control group studied the official curriculum of science and re-designed the science curriculum was taught for the experimental group to be consistent with the Islamic point of view. A pre-test to measure students' science processes, and a measure of their motivation towards learning science. The researcher extracted examples of science processes from the Holy Qur'an and benefited from them in re-designing the science curriculum to be consistent with the Islamization of curricula. The results showed that the proposed science curriculum had a significant and positive impact on students' acquisition of science processes, and increased their motivation towards learning science.

Keywords: First keyword, Second keyword, Third keyword, Fourth keyword, Fifth keyword

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1. Introduction

The objectives of education in Jordan at all educational levels emphasized the consolidation of the Islamic faith. As stated in the objectives of teaching science for the basic stage in these curricula: to have a conscious knowledge of Islam and its principles, rulings and values and apply them in his behavior. The Islamic conception interacts with scientific facts and encourages contemplation and contemplation in this constant movement of the universe and life, but it attributes everything to God's will and destiny. The early Muslims realized the relationship with all its dimensions of faith, and that was a motive for them to think, research and explain as they returned everything in this universe to the will of the Creator, the Exalted, and they excelled in owning the processes of science from observation, measurement and experimentation. This has achieved consistency between science and faith, and this deep understanding of Islam and its comprehensiveness is a motive for more knowledge, research and work [1]. Muslims are monotheism (Islam), and they believe that the universe belongs to GOD, and explains these phenomena in the light of His will, as God created this world and subjected it to fixed laws, and asked us to reflect on them in order to infer His existence and oneness. The believer who studies the sciences is the one who understands Islam in its comprehensive framework, as it combines the unity of the system in building the atom and the building of the solar system, and the unity of movement in the circumambulation of electrons around the nucleus, the circumambulation of the planets around the sun, the circumambulation of Muslims around the Kaaba, and the unity of energy, regardless of its many forms. where he returns them all to one origin and one Creator; Thus, deepening faith in God alone. Science with all its



disciplines (biology, chemistry, earth sciences, physics, and astronomy) is one of the most amenable to Islam. The Islamic civilization advanced when it was concerned with the strength of science directed by religion and the correct belief. Perhaps presenting sciences in integrated curricula linking science to the Islamic faith of students increases their motivation towards learning sciences, and their possession of basic and integrative science processes, as this positively affected the early Muslim scholars. Hence, the Islamification of the science curriculum, or its Islamization, was a necessity to build a refined human civilization and to continue scientific and technical progress while preserving the supreme goal for which it was created [2, 3].

Bonnassies and Bolloré [4] debated about the relationship of science to the divine. They proceed from the fact that scientific discoveries related to relativity, quantum mechanics, the complexities of living organisms, the thermal death of the universe and the Big Bang theory have become sufficient to change the belief and convictions of any atheist who does not believe in the existence of God. The book states that four or five centuries ago, science developed an alternative discourse, in which the explanation of the world seemed capable of dispensing with God. Based on the philosophers Copernicus to Freud to Galileo to Darwin, this has led to a very powerful, even dominant, materialist current. But since the beginning of the twentieth century, science has shifted and seems to confirm the correctness of the old saying (a little science keeps us away from God and a lot of science brings us back to Him). And in the context of the progress made by science, in the field of thermodynamics, quantum physics, relativity, complexity in biology, the Big Bang theory, and the extreme accuracy of the constants that regulate our universe. All of these elements changed things, and led to two observations: First: If there was a beginning of the universe, then there is a reason that precedes its appearance, that is, that infinite time in the past is impossible, and that there is an absolute beginning of time, space and matter, which are related elements, as Einstein taught us. If there is a beginning, then the reason for the origin of this appearance is not material, spatial, or temporal, but transcends our existence and the existence of the entire universe, and then we are very close to getting to know the God of whom all classical philosophies and religions spoke.

Second: There is precise control of the universe, if there were no constants, or the initial data of the universe exactly as they are, the atoms would not exist, stars could not form and last for billions of years, and complex life would not have any chance to continue. These two observations lead us to believe that there was, at the root of all this, a knowing Creator who wanted to create the world so that we could exist [5]. Hansson [6] criticizes the method of indoctrination through the hidden method of teaching science and believes that messages about the nature of sciences that are taught to students, and related to linking science with atheistic perceptions far from religion, are ideas that do not correspond to the official science curriculum but are part of the hidden method; Because these ideas and opinions are not part of science. It also discusses, Ruse [7] the relationship between science and atheism, and asks indignantly whether science should be employed towards atheism? He tries to respond to those who wanted to employ science to serve atheism, invalidates their arguments, and believes that many of the pioneers of modern science such as Copernicus, Kepler, Galileo, Descartes, Boyle, and Newton were all religious.

Coyne [8] states that science should be presented in isolation from religion; However, Gould [9] concluded that the majority of scientists and philosophers of science agree that science does not address the major issues related to the nature of the Creator. Scholars faced clashes with the church because of some facts in their sacred books that contradict the scientific facts they reached; This motivated some to separate science from religion, and even call for science to be used towards atheism. However, Ruse [7] proposed that science requires and entail atheism are not convincing. Islamic religion, which encouraged thinking and scientific research, did not contradict the facts and laws of science and even preceded science in many of its facets, so scientific knowledge of all kinds should be integrated with Islamic principles, to achieve the balance and integration required in this world and the hereafter. Hence, this study proposes a science curriculum from an Islamic point of view, and investigate its impact on increasing students' motivation towards learning science, and their acquisition of science processes, which is an important goal for science teaching.

2. Previous research

Several studies have been conducted on the subject of the impact of curricula from a religious point of view due to their importance. Barnes et al [10] found that most religious students reject the theory of evolution and that there is a conflict between their beliefs and the theories of evolution, and this causes confusion and disruption in the education process. In the Islamic context, Mualimin & Subali [11] showed that the majority of teachers

do not integrate the Holy Qur'an and the Prophetic hadiths when teaching biology topics, and the reason for this is due to their limited knowledge and knowledge about the Qur'anic verses and hadiths related to the subject of biology. Moreover, Al-Hadabi [12], stated that stakeholders support the inclusion of science verses into science curricula, and their positive impact on science learning. Alnajjar [1] adopted (10) criteria to investigate the content of all elements of the science curriculum. The study showed the absence of (6) criteria, and the availability of (4) criteria that appeared in (116) paragraphs in all curricula, including the student, teacher and activity book. In Kuwait, Alshammari et al. [13] recommended the necessity of linking science curricula with cultural and religious standards, and training teachers on them, in order to improve students' learning and their attitude towards science. In Malaysia, Yusof & Rashid [14] found that students have positive attitudes towards integrating religion with science, and a correlation relationship between their attitude towards science and their perception of merging religion and science. In England, Billingsley et al [15], which aimed to identify the beliefs and roles of science teachers in schools in England found that although science curricula do not mention religion; However, the students had clear religious beliefs, and the teachers worked hard to get to know the students' views on the interrelationship of science and religion. The study discussed the re-design of the curricula, and the need to see students' opinions and beliefs. In Palestine, Alustath [16] analyzed the content of (20) science books at the basic education stage in Gaza in Palestine from an Islamic perspective. The study dealt with all school science books for the first and second parts of the first to tenth grades, and their number is. The study found the absence of (4) basic areas from the Islamic perspective, in addition to the availability of (46) Islamic witnesses only in the content of the studied curricula. In the scientific field.

The review of the literature showed that studies suggest criteria that represent the Islamic view of science curricula, as in the study of [16, 1]. Most of the previous studies also agreed on the absence or lack of clarity of the Islamic or religious view in the elements of science curricula. All previous studies tried to investigate the association between religion and science and showed a close association between religion and science, and some of them recommended the need to re-design curricula to show this relationship, as in the study: [13-15, 17-20]. Accordingly, the current study investigates the impact of a suggested curriculum of science from an Islamic point of view on students' attitudes towards science and their academic achievement.

3. Objective and questions

The current study aims to investigate the impact of the Islamization of a proposed science curriculum (educational unit) on students' acquisition of processes and their motivation towards learning science. The study specifically attempts to answer the following questions:

- What are the examples of basic and integrative science processes that were mentioned in the science curriculum (the educational unit) and can be deduced from the Holy Qur'an?
- What is the impact of the Islamization of a suggested science curriculum on the acquisition of science processes for seventh graders in Amman - Jordan?

What is the impact of this proposed curriculum on the motivation towards learning science for the seventh-grade students in Amman-Jordan?

3.1. Hypotheses of study

- “There is no significant difference between experimental and control groups of students.
- There is no significant difference between experimental and control groups of students.

3.2. Methodology

The study used the experimental method and deductive approach, as it extracted from the Qur'anic verses. The study population are seventh-grade students in Amman Governorate schools in Jordan in the academic year 2021/2022. The study sample was randomly selected. The sample members (60) students are from (Al-Hassad) the students are distributed into two groups:

- The experimental group numbered (30) students and was taught according to the curriculum from an Islamic perspectives.
- The control group consisted of (30) students, and they were taught according to the official curriculum.

3.3. Study instrument

The scale of acquisition of knowledge processes adapted from [21-23]. The psychometric properties of the scale have been verified using first: expert in curricula, methods of teaching science, measurement and evaluation. Second; by applying the scale to an exploratory sample and calculating the Pearson correlation coefficient among the response of all respondents.

Table 1. Pearson's correlation coefficients between the respondents' response to each item and all responses to all items

Item	Pearson's correlation coefficients	Item	Pearson's correlation coefficients	Item	Pearson's correlation coefficients
1	.801**	7	.903**	13	.431*
2	.835**	8	.811**	14	.701**
3	.630**	9	.920**	15	.716**
4	.755**	10	.713**	16	.845**
5	.431*	11	.602**	17	.781**
6	.613**	12	.688**	18	.821**

It can be seen from the table above that there is a statistically significant difference at the significance level (0.01) and (0.05), which indicates that the structural validity property has been achieved, meaning that this scale measures students' motivation towards learning science. Also, the researcher verified the stability of the scale using Cronbach's alpha coefficient for the stability scale of science operations as shown in Table 2.

Table 2. Findings of the pilot study

Items	Cronbach Alpha
18	0.82

Motivation Scale for Learning Science:

To build a scale of motivation towards learning science, the researcher followed the following steps adapted from [21-25]. Then the researcher applied the scale to an exploratory sample. The psychometric properties of the scale were verified as follows by expert validation and statistical structural validity of the tool by using the Pearson correlation coefficient. It is clear from the previous table that all Pearson correlation values were statistically significant as shown in Table 3.

Table 3. Pearson correlation coefficient

Item	Pearson correlation coefficient	Item	Pearson correlation coefficient	Item	Pearson correlation coefficient
1	.831**	8	.864**	15	.816**
2	.825**	9	.918**	16	.825**
3	.630**	10	.727**	17	.831**
4	.755**	11	.543**	18	.810**
5	.431*	12	.728**	19	.423*
6	.613**	13	.442*	20	.632**
7	.916**	14	.608**		

3.4. Scale stability

The researcher verified the stability of the scale using pilot study, the value of Cronbach's alpha stability coefficient was high, that is, the stability characteristic of the measure of the tendency towards science is achieved, that is, we can obtain results similar to the results of the study if the measure was applied to another random sample selected from the study population as the following table shows that:

Table 4. Findings of the pilot study

Items	Cronbach Alpha
20	.9100

3.5. Treatment

- After preparing the study tools and verifying their validity and stability, the researcher coordinated with the science teacher who teaches the seventh grade - after obtaining official approvals - and the students of Division (A) were considered the experimental group, and the students of Division (B) were the control group.
- The scale of science operations and motivation towards science were distributed before teaching the unit.
- The researcher provided the science teacher with the proposed new unit that is consistent with the Islamic point of view - after its design and verification of its validity - and then trained on it. The science teacher taught the experimental group the proposed new curriculum, in the first semester of the year 2021/2022.
- The scale of science processes and motivation towards science were distributed after teaching the unit, and then the results were obtained for analysis and interpretation.

4. Learning materials

4.1. The "classification of living organisms"

Unit were selected from the science textbook for seventh-grade students in the first semester of 2021/2022. The unit included the following lessons: the animal kingdom, plant, fungi, and protists. This unit was chosen for the following reasons: The unit includes many topics in neighborhoods, which facilitates linking them with the proposed Islamic standards. For example, it was mentioned in one of the unit's lessons the classification of living things, and here it can be linked to the Qur'anic verse: "And Allah has created from water every living creature. Some of them crawl on their bellies, some walk on two legs, and some walk on four. Allah creates whatever He wills. Surely Allah is Most Capable of everything" (An-Nur, 45). The unit contains scientific topics of importance that may contribute to increasing the motivation towards studying science, such as life processes in plants, life processes in microorganisms, life processes in animals. The unit contains scientific topics of importance in acquiring and practicing basic and integrative science processes, such as observation, classification, and experimentation: where there are activities that invite the student to observe, compare, classify, and conduct experiments. The unit includes a variety of scientific knowledge material, as its objectives included Bloom's levels in the field of knowledge. The study was conducted in the first semester of 2021/2022.

4.2. Preparing the science curriculum from an Islamic point of view

- After reviewing the previous studies, the researcher re-designed the science curriculum for the intended study unit by taking the following considerations:
- Linking every scientific fact mentioned in the unit to the Creator - Almighty and Exalted be He - as possible, for example, chloroplasts perform the photosynthesis process. This scientific fact can be reformulated: God, the Blessed and Exalted, created the chloroplasts and provided them with a set of compounds and properties to perform their function in the photosynthesis process.

5. Linking the scientific material to what is consistent with it of Quranic verses, prophetic hadiths, or Islamic sayings.

For example: on the subject of "classifying living creatures" it is possible to cite the Qur'anic verses "And God created every animal from water, so some of them walk on his stomach, and some of them walk on two legs, and of them who walk on fours, God creates what He wills". Another example in the lesson of microorganisms: It is possible to add an investigative question about the noble verse: (Now, I do swear by whatever you see, So I swear by what you see) [26, 27] (Al-Haqqah, 38).

Directing the teacher to discuss the meaning of this verse and our duty towards the blessings of God upon us, and to encourage students to cite other verses and clarify their meanings.

Demonstrate the role of Muslim scholars and appreciate their efforts. For example: on the subject of "the senses and the sight," a paragraph could be added about the efforts of Muslim scholars such as Ibn al-Haytham and al-Kindi. On the subject of blood circulation, a special paragraph may be added for the discoverer of the smallest circulation of blood, Ibn al-Nafis. The teacher is directed in the teacher's guide to encouraging students to learn and research the role of these Muslim scholars.

Showing the greatness and appreciation of the Creator, for example: After the question: Do scientists know all creatures? A paragraph is added explaining the noble verse: “And He creates that which you do not know.” (An-Nahl, 8). The student is directed to appreciate the greatness, exaltation and praise of the Creator. Description and interpretation of scientific phenomena from an Islamic point of view.

5.1. Highlighting Islamic civilization and its landmarks

Muslim scholars were the pioneers of practical experimental approaches in many scientific fields, and they made the practical experience a condition for reaching the scientific truth. It is possible to add scientific material and some applications about the Islamic civilization related to the topic of the lesson. Guidance can be given to students discussing this topic.

5.2. Adding a scientific subject related to the criteria suggested by specialists

Such as the call to scientific thinking to infer God’s creation and the call to contemplation and contemplation of God’s creatures.

1. Presentation of results, data analysis and interpretation:

- Answering the first question of the study, which is: What are the examples of basic and integrative science processes that were mentioned in the science curriculum (educational unit) and can be deduced from the Holy Qur’an?

5.3. Observation process

The observation process was included in all activities in the lessons of the classification unit (the unit to which the study is applied), where it called on students to pay attention, use different senses and use certain scientific tools and devices. Many noble Qur’anic verses have referred to the process of intended observation, including The Almighty’s saying: (And in yourselves. Then will you not see?) (Al-Dhariyat: 21). And the Almighty’s saying: “Do they not ever reflect on camels—how they were ‘masterfully’ created” and how to create it.

• Measurement process and the use of numbers

The measurement process was included in the questions and activities of the first, second and fifth lesson, where it asked the students to use different measurement tools accurately and objectively to implement the required activities, and to perform some numerical calculations. The process of quantitative measurement came in Qur’anic verses, including the Almighty’s saying: (Woe to the defrauders! Woe to those who give less [than due]) (Al-Mutaffifin: 1-3). The verse refers to the measure, which is one of the tools for measuring mass. And in the Almighty’s saying: (Indeed, we have created everything, perfectly preordained. Indeed, all things We created with predestination.) (Al-Qamar:49). The noble verse indicated that everything that God Almighty created is measurable and was created with certain precision and measure. And in the Almighty’s saying: “So whoever does an atom’s weight of good will see it. So, whoever does an atom's weight of good will see it, and whoever does an atom’s weight of evil will see it, And whoever does an atom's weight of evil will see it” (Al-Zalzalah: 7-8), the noble verse referred to the weight of the atom, and that God will be held accountable for the work even if it is as small as the weight of the atom. The basic numbers from one to nine appeared in many verses, as did the complex numbers, and the expressions of contracts, hundreds and thousands, and the words of fractions such as half, third and quarter, and this indicates the utmost accuracy in explaining and discussing these topics. Among these noble verses: The Almighty’s saying: “Those who swear not to have intercourse with their wives must wait for four months.¹ If they change their mind, then Allah is certainly All-Forgiving, Most Merciful” (Al-Baqarah: 226). And the Almighty’s saying: “Indeed, the number of months ordained by Allah is twelve—in Allah’s Record¹ since the day He created the heavens and the earth—of which four are sacred. That is the Right Way. So do not wrong one another during these months. And together fight the polytheists as they fight against you together. And know that Allah is with those mindful ‘of Him.’” [28, 29]. (At-Tawbah: 36).

5.4. Classification process

The classification process is included in all lessons of the unit, where living organisms are classified based on common characteristics and criteria into the animal kingdom, plants, fungi and protists, bacteria and archaeology. The classification process has been explicitly mentioned in noble Qur’anic verses, including The Almighty’s saying: “And Allah has created from water every living creature. Some of them crawl on their bellies, some walk on two legs, and some walk on four. Allah creates whatever He wills. Surely Allah is Most Capable of everything.: (45). The noble verse classifies living creatures according to their movement into categories: some move on their stomach, some on two legs, and some on four. And in the words of the Highest:

olives, and pomegranates, similar 'in shape' but dissimilar 'in taste'. Look at their fruit as it yields and ripens! Indeed, in these are signs for people who believe) (99). The noble verse calls for contemplation and research on the types of plants and their fruits, their similarities and differences, and the call to believe in the power of God who created them.

5.4.1. The inference processes

The classification process was included in all unit lesson questions, where it asked the students to use the information known to them to reach the knowledge of the unknown and the result without resorting to experimentation, through the processes of induction and deduction. The process of reflection in Quranic verses, including the verse: "Are you 'O Prophet' not aware of the one who argued with Abraham about his Lord because Allah had granted him kingship?" [30](Al-Baqarah: 258). It is understood from the noble verse that the way to know God Almighty is through the precise laws of the universe that God created. Our master Abraham, peace be upon him, inferred the power of God Almighty and that he is the Creator, and proved the inability of the King to do so. Sunrise and sunset - as one of the natural phenomena - which only God Almighty can do.

The process of induction and deduction were mentioned in all the activities and questions of the unit lessons, where the students were asked to extrapolate the classification rule or to derive examples from the given classification rule. These operations were mentioned in noble Qur'anic verses, including The Almighty's saying: (And if a matter of security or fear came to them, they spread it, and if they had referred it to the Messenger and to those in authority among them, those who infer it from among them would have known it. In the noble verse, there is an explicit call to return to specialists, to benefit from those with experience and competence, and the need to derive subsidiary knowledge from universal knowledge. And the Almighty's saying: (Say: "Travel throughout the land and see how He originated the creation, then Allah will bring it into being one more time. Surely Allah is Most Capable of everything.") [31] (Al-Ankabut: 20), where the verse calls for contemplation and research in many examples to extrapolate the rule of how creation began and to re-create it in the Hereafter. The forecasting processes was included in the activities and questions of the third and fourth lesson in the unit, where it asked the students to use the current information to predict the occurrence of a phenomenon related to it in the future.

By reflecting on some verses of the Noble Qur'an; It is possible to deduce the process of prediction from some Qur'anic verses, including the Almighty's saying: (Moses said to him: Shall I follow you, that you teach from what you have been taught in a right way? Our Master Al-Khidr, before accompanying Moses, peace be upon them, had predicted that he would not be able to bear patience on the journey, and this is what actually happened after that. Communication process is included in all unit lessons by directing students to discuss, conduct activities and write reports. The process of communication has been mentioned in many noble Qur'anic verses, including Allah's saying: The noble verse indicates that Mary, peace be upon her, communicated with her people non-verbally by pointing, and Jesus, peace be upon him, communicated verbally with them when he was young. The process of imposing hypotheses is included in all activities of the unit by directing the students to the possible answers to the results of these experiments. Examples of this process can be deduced in noble Qur'anic verses, including Where Abraham, peace be upon him, formulated several hypotheses to reach the truth, and was certain by himself and his mind that God Almighty is the Creator of the heavens and the earth. Interpretation process is included in all unit questions and activities by guiding students towards the interpretation of phenomena related to the classification process. In the Holy Qur'an, there is a call to question the people of knowledge and to specialize in ambiguous issues that need explanation and interpretation. For example, the Almighty's saying: "If you 'polytheists' do not know 'this already', then ask those who have knowledge 'of the Scriptures (An-Nahl: 43).

The process of procedural definitions: the definition of scientific concepts was included in all unit lessons, and the activities focused on their procedural definition, as it develops students' ability to accurately define concepts through practical procedures that led to their formation. Examples of procedural definitions were mentioned in the Holy Qur'an, like Moses, peace be upon him, formulated a procedural definition of a minister. The process of controlling variables and experimentation was included in all unit activities by guiding students towards conducting experiments according to specific steps. Several examples of controlling variables were mentioned in the Holy Qur'an, such as the manufacture of the bronze alloy by King Dhul-Qarnayn through certain metal ratios, as in The Almighty said: "Bring me blocks of iron!, Then, when he had filled up 'the gap' between the two mountains, he ordered, Blow! When the iron became red hot, he said, "Bring me molten copper to pour over it" (Al-Kahf: 96).

The process of experimentation was explicit in the story of Abraham, peace be upon him when he asked by practical sensory experience how to revive the dead. As in the Almighty's saying: (And 'remember' when Abraham said, "My Lord! Show me how you give life to the dead." Allah responded, "Do you not believe?" Abraham replied, "Yes I do, but just so my heart can be reassured." Allah said, "Then bring four birds, train them to come to you, 'then cut them into pieces, ' and scatter them on different hilltops. Then call them back, they will fly to you in haste. And 'so you will' know that Allah is Almighty, All-Wise".

5. Findings and Results

5.1 Findings of research question two

Through the exploratory sample that the researcher used to make sure of the psychometric properties of the science processes scale and the motivation scale. It turned out that the averages of students' responses on the scale of science processes and motivation are close to the normal distribution, and therefore the appropriate test to verify the two hypotheses is the independent samples T-test.

The results of homogeneity of the control and experimental groups through a t-test for two independent groups on the pre-application of the science operations scale, which is illustrated in the following table:

Table 5. T-test for two independent groups for the difference between the experimental and control groups

Group	MS	SD	T	FD	P
Control	2.02	0.701	- 0.165	57	0.841
Experimental	2.05	0.681			

It is clear from the previous table that the significance level value of (t) test was (0.841), which is greater than (0.05), and therefore there are no statistically significant differences between the average results of the students of the control and experimental groups on the tribal application of the science operations scale, meaning that the two groups are homogeneous.

Then, the researcher verified the previous two hypotheses by using the t-test for two independent samples for the difference between the averages of the students' responses in the two groups on the dimensional application of the science operations scale, as shown in the following table:

Table 6. t-test for two independent groups for the difference between the mean responses of the control and experimental groups on the pre-scale of science operations

Group	MS	SD	T	FD	P
Control	2.7	0.63	-5.42	55	0.001
Experimental	4.0	0.94			

It is clear from the previous table that the significance level value of (t) test was (0.001), which is less than (0.05), and therefore we reject the null hypothesis and accept the alternative hypothesis, that is, there are statistically significant differences between the average results of the students of the control and experimental groups on the dimensional application For the science operations scale, and for the experimental group. In order to show the effect size of the independent variable (the science curriculum with an Islamic view), the researcher used the Cohen D coefficient to measure the effect size, and it is equal to (51.4).

5.2 Findings of research question three

The answer to the third study question, which is: What is the impact of this proposed curriculum on the motivation towards learning science for seventh-grade students in Amman-Jordan?

The results of homogeneity of the control and experimental groups through a t-test for two independent groups on the pre-application of the motivation scale towards learning science, which is illustrated in the following table:

Table 7. T-test for scores for the difference between the control and experimental groups on the pre-application of the scale of motivation towards learning science.

Group	MS	SD	T	FD	P
Control	3.13	0.32	-1.12	55	0.261
Experimental	3.32	0.45			

It is clear from the previous table that the significance level value of (t) test was (0.261), which is greater than (0.05), and therefore there are no statistically significant differences between the average responses of the two

groups on the pre-application of the motivation scale towards learning science, so the two groups are homogeneous. After that, the researcher verified the two previous hypotheses by using a t-test for two independent samples for the difference between the averages of the students' responses in the two groups on the post-application of the motivational scale towards learning science, as shown in the following table:

Table 8. T-test of the difference between control and experimental groups on the post-application of the motivation towards science scale

Group	MS	SD	T	FD	P
Control	3.31	0.231	-3.82	55	0.001
Experimental	3.55	0.215			

It is clear from the previous table that the significance level value of (t) test was (0.001), which is less than (0.05), therefore we reject the null hypothesis, and accept the alternative hypothesis, that is, there are statistically significant differences between the average responses of the control and experimental groups on the post-application of the scale motivation towards learning science, and in favor of the experimental group.

To clarify the effect size of the independent variable (the science curriculum with an Islamic view), the researcher used Cohen D coefficient for the effect size, equal to (1.12), and the effect size value can be interpreted, that the proposed science curriculum had a significant impact, and was statistically significant for improvement Motivation to learn science [32].

It is worth saying here, that the results of this study are in agreement with many of the results of previous studies, which tried to investigate the relationship between science and religion, and showed the existence of a close relationship between science and religion, and some of them recommended the need to re-design the curricula to show this relationship as in [13, 15, 17-19].

6. Discussion

Perhaps the following reasons seem reasonable to explain the results of this study:

- If scientific knowledge is linked to the student's Islamic faith, this will achieve a balance in the student, for that doctrine calls for contemplation, contemplation, and research in the universe, the earth, and creatures, and this belief will support the formation of an internal state that pushes him to respond to this doctrine to learn science, research, and learning. And owning the processes of science, such as intentional observation, experimentation, measurement, and classification to explain phenomena and infer the Creator. In the study of Barnes et al [10], the lack of linking scientific knowledge to the student's faith had a negative impact, as this caused confusion among students. As well the study of Al-Shammari [13] showed that the lack of linking the science curricula with the student's religious and social culture had a negative impact on understanding the science curricula and their motivation and attitude towards it. As well as Ornek [18] showed that culture clearly affects students' motivation and attitudes towards science and their future career choices related to science, and this affects their motivation towards understanding science and acquiring science processes. As well as a study (Yusof et al, [14], showed that students have a greater desire to study science if religion is combined with science.
- The Islamic faith is characterized by calling for research, meditation, thinking and practising science operations, and this is evident in many Quranic verses and prophetic hadiths. In Islamic culture and heritage, what is known as scientific precedence or scientific miracles has appeared, and many institutions have been established, and many studies have been conducted on that? Many studies like [17] have dealt with the topic of scientific miracles in the Holy Qur'an and the Prophet's Sunnah, and they showed the positive impact on students' thinking and their motivation towards learning science.

7. Conclusion

In light of the results of this study, which showed a positive relationship between the science curriculum from an Islamic point of view and their ownership of science processes, and their motivation towards learning science, the study recommends inviting officials, decision-makers, and curriculum designers to adopt a closer relationship between science and religion in science curricula. conducting studies similar to this study in other societies and curricula, and making comparisons between the results of these studies; To reach a clear vision about the integration of knowledge, and how to link science with the Islamic faith. However, despite the fact the study has managed to answer the research question, the current study is limited to a sample of seventh-grade students in the capital Amman governorate for the year 2021. The unit of classification of living things in the

first semester was chosen as a sample of the science curriculum. This unit, after developing and modifying it to be consistent with the Islamic view, was taught to the sample members in the experimental group in the first semester of 2021/2022. It is also limited to deriving some examples of basic and integrative science processes from the Holy Qur'an and generalizing them to other Qur'anic verses that require further research.

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