

A Qualitative Study on the Use of the Concepts and Subjects of Life Sciences in Religion Courses

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Abstract. This study aims at determining the science concepts and subjects used in the "religion courses" taught in secondary schools and the contribution of science to religion courses, which is not a widely studied topic in the relevant literature. Like qualitative research, this study is a multiple case study. The data were collected using a semi-structured interview with five Muslim religion teachers working in an eastern city of Turkey. The interview data were analyzed using the basic descriptive and content analysis methods. The findings showed that religion teachers benefit from the concepts and subjects of science in their courses; using life sciences in their religion courses had a positive impact in teaching religious subjects better to the students; the use of the concepts of life sciences in religion courses enabled students to perceive the subject better; students enjoyed the use of science concepts in religion courses and also students asked questions to their teachers about many subjects of life sciences. Religion teachers expressed that they did not feel competent enough in the life sciences. Some recommendations, such as organizing in-service training have been made for religion teachers to feel competent enough in life sciences.

Keywords: beliefs, secondary school students, muslim, religious education, science education

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INTRODUCTION ~ The education systems that are updated regularly should educate students by adapting to innovations, and provide students with the integrity of learning in different disciplines by connecting among the disciplines. Thus, interdisciplinary teaching should be held by involving other disciplines in the learning and teaching process (Arslantaş, 2006).

The concept of interdisciplinary refers to bringing many disciplines and integrating them (Cluck, 1980; Kline, 1995). The interdisciplinary approach helps students bring information from different disciplines, and allows them to develop high-level thinking skills, such as analysis, synthesis, making use of concepts. Thus, the interdisciplinary approach is essential for the enrichment and dynamization of the learning environment, enabling students to use their creativity, and increasing their interests in the courses, thus facilitating meaningful learning (Aybek, 2001). The interdisciplinary approach aims at facilitating learning a certain subject as a meaningful whole by making use of the perspectives of different disciplines (Yalçın & Yıldırım, 1998).

An interdisciplinary approach focuses on ensuring the quality of the education, and attaching importance to life sciences, mathematics, social sciences, foreign languages, and the religious education taught as different disciplines and the information in these disciplines, which allows conducting qualified programs based on cooperation (İşler, 2004).

Although there are many studies carried out in the field of education in Turkey, most of them are conducted on a single discipline and contributed solely to the development of that discipline and problem-solving. However, the number of interdisciplinary studies is very limited in Turkey compared to other countries, which remained under-researched. Interdisciplinary studies are usually conducted in the field of social sciences. There are very few published interdisciplinary studies in the field of life sciences in Turkey (Turna & Bolat, 2015) and they remain to be addressed.

Turkey in particular has also made radical changes in the name of the science curriculum at the beginning of the 2000s. The most important parts of these changes are the programs implemented in 2005 and 2013. The data obtained from the studies about the Science and Technology Course Curriculum, which came into force in 2005 and based on the troubles reflected in the reports, The Ministry of National Education has changed it in 2013 regarding the structure of the program (Bakırcı & Çepni, 2014). In 2013, in line with the points required in the reports obtained from the results of the data collected from the field related to the 2005 Science and Technology Education Program, and in accordance with the points required to be regulated, the 4+4+4 education system (The first stage is a 4-year primary school (1st, 2nd, 3rd and 4th grade), the second stage is a 4-year lower secondary school (5th, 6th, 7th and 8th grade) and third-tier, four-year is an upper secondary school (9th, 10th, 11th, and 12th grade), together with the requirements of the age and scientific developments were taken into consideration and the requirements for the program to be improved and revised has emerged (Bakırcı & Çepni, 2014; Karatay, Timur & Timur, 2013). Changing conditions and requirements will naturally evolve the teaching process in light of the data obtained from the past. The vision of the Science Course Teaching Program, which was started to be implemented in 2013, was defined as "to educate all students with the awareness of science literacy".

The most appropriate fields to be integrated in terms of their domains and the scientific methods used in problem-solving are considered technology, mathematics, and life sciences (Rodriguez, 1997), which are integrated among some courses. They ensure that they are both understood in terms of logic and reasoning. Life Sciences (LS) and Education of Religion and Ethics (ERE) courses are thought to complement each other and to be good when taught together for unbiased, qualified, and comprehensible interpretation and explanation. On the other hand, these two disciplines cover a certain area (Gülçür, 2013).

Science and religion are two indisputably profound and durable cultural forces that have a complex history of interaction ranging from controversy and mutual suspicion to ongoing cooperation and accommodation (Shane, 2019).

LS and ERE courses have a significant role in our daily lives because their subjects are mostly from daily life. The positive relationship between these two courses should be investigated in the light of data using different perspectives, and also should be developed and implemented to educate people who think with their minds and feelings (Tarhan, 2012). According to Gülçür (2013), several courses have the integrity that complements each other and they have a positive in understanding problem-solving and reasoning. LS and ERE courses are also considered to be taught for ensuring that they are both understood and for unbiased interpretation (Freathy & John, 2019).

Many subjects and topics are mutually addressed by LS and ERE courses. From an external perspective, it does not seem possible for these two disciplines to have something in common or come together. However, when the Quran, hadiths, verses of the Quran, the Prophet Muhammad's deeds and sayings are considered, and the books of Muslim religious scholars and philosophers and the studies conducted on this matter by foreign scientists are examined, the concepts and subjects of life sciences courses overlap with those of religion courses. Many hadiths and verses on this subject, which support this hypothesis and are also the main problem of our research. First of all, the Prophet Muhammad's (PBUH) behaviors regarding cleanliness, environment, eating habits, sensitivity towards the body/health, love for plants and animals, and many other behaviors inspire us to research and examine this phenomenon.

When we consider the school as a reflection of society, religion seems necessary for people as much as the importance of science (Gülçür, 2013). Religion is an indispensable element for humans rather than being a comparable and debatable discipline like science (Saka, 2014).

The analysis shows that the classroom is not a safe space where individuals can talk openly and personally about their religious beliefs. They can only do this amongst close and like-minded peers outside the classroom where they feel confident enough to talk about religious things from a personal perspective (Vikdahl, 2019).

The integration of science and religion guides the development of religion, science, and arts in integrating religious values and character-building, and fulfilling human needs (Ali, 2020).

Since the concepts and subjects of life sciences are often stated in religious resources, verses, hadiths, and religious books that s a bridge between LS and ERE courses. The Quran covers subjects, such as the formation of planets and seasons, the movements of celestial bodies,

and natural phenomena. There is a secret reason for drawing people's attention to these phenomena and the universe's infiniteness (Başkurt, 2008).

LS and ERE courses have several things in common such as cleanliness, health, nourishment, which are taught in the chapters of life sciences courses. It is possible to read these subjects and concepts in many verses, hadiths, and sayings of the Prophet Muhammad (Kayadibi, 2008). Religion teachers make use of Prophet Muhammad's deeds and sayings in the form of verses, hadiths, and example behavior when necessary, which they refer to as resources. They also noted the concepts and subjects of life sciences in the resources they use.

The education of religion and ethics is one of the important subjects that influence students' scientific thinking methods and whose positive or negative effect on the development of their thoughts cannot be ignored. However, when the literature, and the studies conducted under the title of "religious studies and life sciences" are especially examined; there is little research on such topics in Turkey. Among very few examples, there is a sample study on "the comparison of the common values of religion and science" (Saka, 2014) in the Turkish context.

When the curriculum of the primary school basic religion course is examined, the concepts regarding the life sciences course are seen in the learning outcomes of the 5th, 6th, 7th, and 8th grader basic religion courses. Based on Table 1, the concepts of "the creation of humans" and "the creation of the universe" are included in the insights to the chapter and learning outcomes of the 5th grader basic religion courses. These subjects are also related to the subjects of the formation of humans, the formation of the universe, the formation of the Earth, and the layers of the Earth in life sciences. Religion teachers use these concepts of life sciences as well, and make references to life sciences course when teaching these subjects.

Table 1. Religious vocational elementary school, basic religion course (Islam; 5) curriculum, chapters, concepts, learning outcomes, and descriptions (Ministry of National Education, 2012)

Insights to chapters	Basic Religion	
Chapter 2: The Creation From The Perspective Of Islam	Learning Outcomes	Description
1. The Creation of the Universe from the Perspective of Islam	At the end of this chapter, students will be able to:	Use visual materials when this chapter is being taught;
2. The Creation of Humans from the Perspective of Islam	1. Make sense of the creation of the universe from the perspective of Islam;	
2.1. The Creation of the First Human	2. Realize that the creator of all creatures in the universe is Allah;	This will be explained taking the verses on the

2.2. The Phases of Human Creation	3. Explain the creation of the first human, the Prophet Adam;	creation of other humans after the first human as a base (4th Learning Outcome);
2.3. Why was man created?	4. Make sense of the phases of the creation of other humans after the first human;	
3. The Harmony and Beauty in Creation	5. Realize that the purpose of human creation is to worship Allah and this worship brings responsibilities to humans; 6. Make sense of harmony and beauty in creation; 7. Explain how nothing is created randomly or without purpose by giving examples.	

In daily life, the course of Religious Culture and Moral Knowledge is one of the important courses that affect the scientific thinking of students and have a positive or negative impact on the development of thoughts of students. But when we look at the studies conducted in the literature review, especially under the name of religion and natural sciences, such studies are almost absent. Examples of this kind of studies are more often found in the topic of "religion and science" (Barnes, 1906; Hanley, Bennett, & Ratcliffe, 2014; Leonov, 2011; Loving & Foster, 2000; Nord, 1999; Southerland, Sinatra, & Matthews, 2001; Taber, 2013). Therefore, this study was conducted to fill a gap in the literature under the topic of religion and natural science. This research aims at determining the science concepts and subjects used in the "religion courses" taught in secondary schools and the contribution of science to religion courses. The research question "What are the teacher's thoughts about the use of the concepts and subjects of science in religion courses?" constitutes the main problem statement of the research.

The sub-problems of the research could be listed as follows:

1. What are the science concepts used by teachers in religious education?
2. Why do religion teachers use life sciences in religion courses?
3. What are the effects of the use of scientific subjects on students in religion courses?
4. What are the subjects of life sciences that students ask questions about?
5. How competent do teachers feel about the subjects of life sciences?

METHOD

A qualitative research approach was used in this study to collect data in detail; to directly learn the individual perceptions, experiences, and perspectives of participants; and to understand and explain the current situations (Büyükoztürk, Çakmak, Akgün, Karadeniz & Demirel, 2009). This study employed a multiple case study method. The case study method

focuses on a current phenomenon, event, situation, individual, or group; and aims at examining them in-depth to examine a subject in detail without having any biased opinion (Ekiz, 2009; Saban and Ersoy, 2017; Stake, 2013). The case study methodology was chosen to enable a detailed exploration of teacher's thoughts about the use of the concepts and subjects of science in religion courses, using a combination of different data sources. Case study research incorporates multiple sources of evidence and uses a naturalistic design to explain, describe, or explore an event or phenomenon in detail and its natural context, being particularly useful in answering. In the current study, the determination of teachers' thoughts about the use of the concepts and subjects of science in religion courses in religious vocational secondary schools was chosen as a real-life situation, and this study aimed at revealing the factors that affect teachers' these thoughts. Each source of data offers different perspectives and complementary evidence that help to construct an understanding of the issue under study.

The Participants

The research was conducted with five religion teachers who work in a religious vocational secondary school in Ağrı Province. The participants were selected among religion teachers who work at the religious vocational secondary school. When determining the participants, they were coded as P1, P2, P3, P4, and P5 during the analysis. The demographic details of the participants are given in Table 2.

Table 2. Preliminary Information about the Participant Teachers

Code	Gender	Service Duration (years)	Location
P1	Female	3	Ađrı
P2	Female	15	Ađrı
P3	Female	3	Ađrı
P4	Male	3	Ađrı
P5	Female	3	Ađrı

When the characteristics of the participant teachers are examined, four were female, and one was male, and the minimum service duration was three years and the maximum service duration was 15 years. The mean of the service duration of the teachers was calculated as 5.8. In addition, the teachers teach not only the Education of Religion and Ethics but also the Life of the Prophet Muhammad, Basic Religion, the Quran, and Arabic since the school they work at a religious vocational secondary school. These features will help us obtain more information about the use of life sciences by teachers with different occupational experiences in religion courses. the methods/designs/procedures used in

Data Collection and Analysis

The research data were obtained by the semi-structured interview technique. In this technique, the researcher prepares interview questions in advance but allows the questions created to be rearranged and discussed, providing partial flexibility to the people

investigated during the interview. In this type of interview, the people investigated also have control over the research. Because of this flexibility, it can be seen in qualitative research (Drever, 1995; Ekiz, 2009). The semi-structured interview consists of 12 themes. These are courses used by religion teachers while teaching religion, such as the reasons to benefit from science life sciences by religion teachers, the contradiction between religion and science, the discipline taken as a base when religion and science contradict, the contribution of science to teaching religion, the threat of scientific developments to religion, the effect of using science subjects in religion courses on students, the questions asked by students regarding life sciences in religion courses, knowledge of religion teachers about life sciences, religion teachers demands for scientific seminars, scientific subjects associated with religion, and scientific issues that harm religion.

In this study, basic level analysis and content analysis were used to analyze the data. The purpose of the basic level analysis is to fairly reveal data without influencing or making comments about the observations and interviews conducted by researchers or with little interpretation. The main reason for conducting this analysis is to prevent the researchers' own opinions from influencing data. Content analysis is the analysis of any written text or document (observation, interview, official and personal document, newspaper, etc.) is a type of analysis used to examine its content and reveal it numerically or statistically (Ekiz, 2009). When examining documents, categories are created, and numerical presentations are made. The following steps were taken in collecting and analyzing the data:

1. Participants were identified.
2. The questions of the interview were determined.
3. The interviews conducted with the participants were recorded by a voice recorder.
4. The interviews were transcribed so that the answers given by the participants could be analyzed.
5. The answers on the same subject were listed to create coding.
6. The answers of the participant teachers were then examined and converted into a table.

RESULTS AND DISCUSSION

The findings obtained were examined in 12 themes from the semi-structured interview data after content analysis. These themes are 1- courses used by religion teachers while teaching religion, 2- the reasons to benefit from science life sciences by religion teachers, 3- the contradiction between religion and science 4- the discipline taken as a base when religion and science contradict, 5- contribution of science to teaching religion, 6- the threat of scientific developments to religion, 7- the effect of using science subjects in religion courses on students, 8- the questions asked by students regarding life sciences in religion courses, 9- knowledge of religion teachers about life sciences, 10- religion teachers demands for

scientific seminars, 11- scientific subjects associated with religion and 12- scientific issues that harm religion.

Courses Used by Religion Teachers While Teaching Religion

Religion teachers were initially asked what were courses they made use of while they were teaching religion. The findings showed that all of the participant teachers made use of Life Sciences in religion course. Table 3 shows the courses that the participant teachers make use of while they were teaching religion.

Table 3. The Courses Used When Teaching Religion

Courses	P1	P2	P3	P4	P5
All courses	✓	-	-	-	-
Life Sciences	✓	✓	✓	✓	✓
Biology	-	✓	-	-	-
Geography	✓	✓	-	-	✓
Social Sciences	-	-	-	-	-
Turkish	-	-	-	✓	-
Psychology	-	✓	-	-	-

Based on Table 3, all of the five teachers made use of Life Sciences when teaching religion. They also seemed to make use of other courses apart from Life Sciences. P1 and P4 indicated how they made use of other courses in religion course as follows:

P1 stated that she made use of geography, biology, and life sciences. When teaching the order of formation of the human body and from where this order has come, s/he made use of life sciences. Moreover, life sciences can be used when teaching the creator of the universe, seasons, the distance of the Sun, and the order of planets.

P4 stated that he made use of Life Sciences and Turkish. S/he made use of Life Sciences when teaching the 5th graders about the creation of humans and the universe, the 6th and 7th graders about the salat associating it with physical movements of the body and the disappearance of some physical diseases due to the salat, the 7th graders how fasting is good for stomach and prevents stomach diseases as well as its relationship with obesity.

Based on Table 2 and the statements from the teachers, the teachers made use of different courses related to the subjects. All of them stated that they especially made use of Life Sciences because they think that the religious subjects they teach were related to Life Sciences course and therefore, they reinforced the subject and students understand it better.

The Reasons to benefit from science Life Sciences by Religion Teachers

The answers given by the religion teachers to the question "Why do you use life sciences? What are the benefits of using them in religion course?" are summarized in Table 4.

Table 4. Reasons for the Use of Life Sciences

Statements	P1	P2	P3	P4	P5
To prove the existence of Allah	✓	✓	✓	-	-
I make students understand the subject better	✓	-	-	✓	✓
To make students better in the sense of the subject	-	✓	-	✓	-
I also talk about life sciences when teaching the verses of the Quran	✓	-	-	-	-
When it comes to science, life sciences courses are predominant	✓	-	-	-	-
To show the harmony of science and religion	✓	-	-	-	-
To reinforce the subject	-	-	-	✓	✓

Based on Table 4, three of the five teachers stated that they used the life sciences course to prove the existence of Allah and to explain the religion topics better, and the other two have indicated that they use the life sciences course to reinforce the subject to their students. In addition, one of the teachers stated that s/he made use of life sciences to show the harmony of religion and science when teaching the verses of the Quran since life sciences were predominant in scientific disciplines. P1 explained that life sciences are predominant in science because when teaching children the development of the embryo, the bond between mother and baby is already stated in the Quran. Thus, if the verses of the Quran is taught like this, the subject of science, especially life sciences, can also be taught.

Based on the statements of P1, the teachers made use of life sciences to show the harmony of science and religion; when it comes to science, life sciences were predominant; when teaching the verses of the Quran, there were subjects in religion which were common with science and life sciences; students were thought to understand the subject better.

In addition, P2 and P3 explained that the reasons why they made use of life sciences are to prove the subject of the existence of Allah, and the order of the universe. Based on the statements of P2 and P3, they made use of life sciences to prove the existence of Allah and the subject and because they believe that the order of the universe could be explained by life sciences.

It is also seen that life sciences could be useful for students to understand the subject better and reinforce their learning. P4 and P5 expressed that the use of life sciences is necessary in some of the subjects, such as the creation of humans, the organs of a human and their functions, the harmony between organs are directly related to life sciences because they believe that students will understand and learn the subjects better if they compare the information they have obtained from life sciences with religion.

Drawing on teachers' opinions, the use of life sciences could be very useful for both teachers and students. Since the subjects of religion and science were related so that here are many examples that teachers could use to prove the subjects in religion to students.

The Contradiction between Religion and Science

When the religion teachers, who stated that religion and science were related and they made use of science when teaching, are asked the question “Do religion and science contradict?”, the answers given are shown in Table 5.

Table 5. Whether Religion and Science Contradict

Courses	P1	P2	P3	P4	P5
All courses	✓	-	-	-	-
Life Sciences	✓	✓	✓	✓	✓
Biology	-	✓	-	-	-
Geography	✓	✓	-	-	✓
Social Sciences	-	-	✓	-	-
Turkish	-	-	-	✓	-
Psychology	-	✓	-	-	-

Religion teachers had the same opinions regarding that religion and science did not contradict. Regarding whether religion and science contradicted, P1 and P3 expressed that religion and science never contradicted because both of them are closely related to each other, which was proven based on the verses on the creation in the Quran. Moreover, if religion and science had contradicted, Islamic scholars would have never been involved in science.

The opinions of P2 and P3 suggest that religion and science cannot contradict each other and this contradiction would not be coherent with the knowledge of Allah.

The Discipline Taken as a Base When Religion and Science Contradict

The answers given by the teachers to the question “Which discipline do you rely on if religion and science contradict?” asked in the interview conducted with religion teachers are shown in Table 6.

Table 6. Which Discipline is Relied on When Religion and Science Contradict?

Statements	P1	P2	P3	P4	P5
They do not contradict	-	✓	✓	✓	✓
They cannot be separated	✓	-	-	-	-
If they contradict, I rely on religion	-	✓	✓	✓	✓

Based on Table 6, four of the five teachers indicated that religion and science did not contradict and in case they contradicted, they relied on religion. One of the teachers indicated that both could not be separated. P1 and P2 stated that religion and science could not be separated because they did not rely on each other. Even, if religion and science were contradicted, they would choose religion and Islamic law.

As it can be inferred from these interviews, there was no such thing as a contradiction between science and religion, as they cannot be separated, there was also no such thing as

preferring or relying on either of them. In other words, religion and science did not contradict each other; on the contrary, they supported each other.

The Contribution of Science to Teaching Religion

The answers given by religion teachers to the question "Does science contribute to teaching religion?" were assessed and their opinions about this question are shown in Table 7.

Table 7. Whether science contributes to teaching religion

Statements	P1	P2	P3	P4	P5
It contributes a lot to teaching religion	✓	✓	✓	✓	✓
Life sciences are also a discipline	✓	-	-	✓	✓
I make use of science	-	✓	✓	-	-
Geography	✓	-	-	-	-
History	✓	-	-	-	-

Religion teachers stated that life sciences contributed a lot to teaching religion, made it easier for teachers to teach subjects in religion, thus teachers made use of life sciences. P1 and P5 expressed that science certainly contributes a lot to teaching religion, for examples, when teaching religious subjects, such as the verses of the Quran, life sciences could be used to help them teach from the perspectives of students, thus they comprehend subjects concretely, or when teaching the creation of humans stated in a verse of the Al-Alaq chapter of the Quran, life sciences is used to make references to science. In addition to using life sciences, physics, chemistry, history or geography could be used in teaching religion.

In other words, teachers made use of concepts from different courses when teaching religion. The resources used by religion teachers to support and prove the subject taught in religion course included geography, physics, chemistry, biology, and history. In addition, the life sciences course was the most widely-used discipline by all the participant religion teachers.

The Threat of Scientific Developments to Religion

The participants, who indicated that science contributed to teaching religion and shared the same opinion, were asked the question "Do you consider scientific advancements as threats to religion?".

P2, P4, and P5 explained that scientific advancements did not pose threats to religion and provided because religion and science did not contradict but they can support each other.

Table 8. Do Scientific Advancements Pose Threats to Religion?

Statements	P1	P2	P3	P4	P5
I do not see scientific advancements as threats to religion	✓	✓	✓	✓	✓
The scientific advancements, which contradict religion, are not threats, but ethically wrong	-	✓	✓	-	✓
The scientific advancements in medicine such	-	✓	-	-	✓

as cloning, sperm banks, and genetic coding
could be threats to religion

Three of the participants indicated that scientific advancements could not be threats to religion but ethically wrong. Two of the five participants thought that some advancements in medicine, such as "Cloning", "Sperm Banks", "Genetic studies", could pose threats to the religion. The participants expressed that even though several advancements in medicine posed threats to the religion. However, some things should be done for advancements, for example, scientists have developed medicine for pneumonia or diarrhea in children. These are examples of the harmony between religion and science.

Based on the statements and opinions of the participants, the findings suggested that science and religion did not contradict each other. From the perspective of Islam, the current scientific advancements were actually behind what the Quran offers compared to the information that the Quran had. It is understood that all participants did not see scientific advancements as threats to religion.

The Effect of Using Science Subjects in Religion Courses on Students

The religion teachers, who stated that they made use of life sciences in religion courses, were asked how this influenced students and what the responses of the students were. The opinions of the teachers about this question are summarized in Table 9.

Table 9. The Influence Caused by the Use of Life Sciences in Religion Courses on Students

Statements	P1	P2	P3	P4	P5
They understand that there are common subjects in life sciences and religion	✓	-	✓	✓	✓
It helps students understand the subject better	-	✓	✓	✓	-
They internalize the subject and make sense of it better	-	✓	-	-	-
They like it	-	-	-	✓	✓
They get surprised	-	-	✓	-	-
They understand that life sciences can be useful in daily life	-	✓	-	✓	✓
They realize that life sciences courses are easy, comprehensible, and fun	-	-	-	-	✓

Based on Table 9, four of the five religion teachers indicated that "they understand that there are common subjects in life sciences and religion" whereas three of the five religion teachers indicated that "it helps students understand the subject better" and "They understand that life sciences can be useful in daily life" in more than one common answers given. Two of the religion teachers expressed that "they like it" and one of the religion teachers stated that "they internalize the subject and make sense of it better", "they realize that life sciences courses are easy, comprehensible and fun" and "they get surprised". P2 expressed that the use of science subjects in religion courses helped students understand the subject better;

students make sense of the subject better; it helps them internalize the subject and use it in daily life.

It can be said the findings suggest that students understood religion course better and internalized the subject, and it helped them use the information they obtained in daily life, and they like it as religion teachers taught religion courses by giving examples from life sciences. P4 and P5 expressed that the use of science subjects made things easier for them, and they can understand the religious dimension of the science subjects. For example, students have heard about Oxygen and Carbon dioxide, they get to realize the virtue of Allah when interpreting this information. They understand that the seed meets with the water and earth and turns into a fruit, and this is something that has to do with both science and religion. In addition, giving examples from life sciences is something students really like because they realize that life sciences are necessary not only for exams but also in daily life.

Based on the opinions of the religion teachers, to teachers, life sciences course was the life itself. Because when the contents and subjects of the chapters of life sciences were examined, it is seen that they included problems we encountered in day-to-day life, environment, human structure and body characteristics, organs and organ health, various diseases, and many other biological phenomena. In addition, students had a perception about life sciences course that it was often hard, complicated, and abstract to learn. The use of the concepts of life sciences by religion teachers when teaching religion may help replace the perception of life sciences being hard, abstract, complicated, and meaningless that students had with an image of life sciences which is fun and makes life easier.

The Questions Asked by Students Regarding Life Sciences in Religion Courses

The answers given by the participant religion teachers, who were asked about which subjects their students asked questions about life sciences, are shown in Table 10.

Table 10. The Subjects About Which Students Ask Questions About Life Sciences in Religion Courses

Subjects	P1	P2	P3	P4	P5
Physics	-	✓	-	-	-
Biology	-	✓	-	✓	-
The subjects of life sciences	-	✓	-	-	-
Solar system	-	-	✓	-	-
The phases of human formation	-	-	✓	✓	-
The creation of human	-	-	-	✓	✓
The functions of organs	-	-	-	✓	✓
The formation of the universe	-	-	-	-	✓
Cleanliness	-	-	✓	-	✓
The development of the embryo	-	-	✓	✓	✓
They do not ask questions	✓	-	-	-	-

Based on Table 10, students associated many subjects in religion course with life sciences and asked questions to religion teachers. Three of the five religion teachers indicated that their students asked questions about the development of embryos whereas the other two religion teachers indicated that their students asked questions about cleanliness, the phases of human formation, the creation of humans, the functions of organs, and biology. It is also indicated that physics, subjects of life sciences, solar system, and the formation of the universe were among the questions that teachers were asked about. Teachers stated that students usually asked questions about all subjects depends on the topics or subjects presented. For example, they asked about life on other planets, the formation of humans from birth to death, the phases of human formation, the creation of humans, and the development of the embryo.

Based on the statements of the teachers, students asked questions about many subjects in life sciences to their religion teachers. An explanation for this could be that students may associate religion course with life sciences course.

Knowledge of Religion Teachers about Life Sciences

Religion teachers were asked how competent they see themselves in life sciences when they are asked these questions. The answers given by the teachers to this question are shown in Table 11.

Table 11. How Competent Religion Teachers See Themselves in Life Sciences

Statements	P1	P2	P3	P4	P5
I feel competent	-	-	-	✓	-
I do not feel competent	✓	✓	✓	-	✓
I feel competent enough at high school and elementary school levels	✓	-	✓	-	-
I refer to the sources of life sciences when I feel incompetent	-	✓	-	✓	✓

Table 10 depicts that only one of the five participant religion teachers felt competent in life sciences, whereas the other four do not feel competent. One of the teachers indicated that s/he knew life sciences at high and elementary school levels, whereas three of the teachers indicated that they referred to the sources of life sciences to make up for what they did not know when they felt incompetent. P2 and P5 expressed that they did not feel competent in life sciences due to a lack of understanding of the subjects in the life sciences, thus they needed to do research about it and learn it.

Based on the aforementioned statements of the teachers, the teachers did not feel competent in life sciences. Therefore, they referred to the sources of life sciences to make up for what they did not know when they were asked questions about the subjects of life sciences.

Religion Teachers Demands for Scientific Seminars

The answers of the religion teachers, who feel incompetent in life sciences, to the questions "Would you want a seminar on life sciences to be organized?" and "If such a seminar was organized, would you be interested in attending this seminar?" are summarized in Table 12.

Table 12. Whether Religion Teachers Would Want a Seminar on Life Sciences to be Organized, Their Opinions

Statements	P1	P2	P3	P4	P5
I would want this seminar to be organized	✓	✓	✓	✓	✓
I would be interested in attending this seminar	✓	✓	✓	-	✓
It would be useful	✓	✓	✓	-	✓
I would be able to provide students with information better	✓	-	✓	-	-
I would not attend this seminar	-	-	-	✓	-

Table 12 depicts that all participant teachers indicated that they would want such a seminar to be organized. One of the teachers indicated that s/he would want a seminar to be organized. However, but s/he would not want to attend such a seminar. The teachers expressed their interest in the well-organized seminar, particularly on life sciences. Moreover, they believed that the well-organized seminars could provide benefits for teachers and students, especially the subjects that they do not understand, such as hadiths on health, the formation of the universe, and the development of zygotes and embryos.

It can be seen that the teachers wanted a seminar on life sciences to be organized. Since religion teachers did not feel competent in life sciences, they thought that this seminar would help them make up for what they did not know about the subjects and questions on life sciences their students asked in religion courses. Considering the interview data, the findings suggest that the seminar could be useful both for teachers and students, which might help teachers provide correct information to their students and helped students understand the subject better.

Scientific Subjects Associated with Religion

The teachers' opinions about "What are the science subjects to be associated with religion?" are shown in Table 13.

Table 13. Scientific Subjects Associated with Religion

Scientific Subjects	P1	P2	P3	P4	P5
Development of the baby in the womb	✓	-	-	✓	✓
Creation of Human	✓	-	✓	-	✓
Systems in our body	-	✓	✓	✓	✓
Nature highlights, seasons, snow, hail, rain	-	✓	✓	-	✓
Solar system	✓	✓	✓	-	✓
The benefits of plants, environment	✓	-	-	-	✓
Animals	✓	-	✓	-	-
Substance, element	✓	-	-	-	-

Formation of water	✓	-	-	-	-
The task of organs	-	-	-	✓	✓
The formation and order of the universe	-	✓	-	-	✓
Prayer and the benefits of fasting to the body	-	✓	-	✓	-
Cleaning	-	-	✓	-	✓
Planets	✓	-	✓	-	-
Organ donation	-	-	✓	-	-
Give blood	-	-	✓	-	-
Lifting force	-	-	✓	-	-
Global warming	-	-	✓	-	-

Four of the five Religious Culture Teachers participating in the interview answered the systems of the solar system and our bodies, while three of them answered the development of the baby in the mother's womb, the creation of the human being, natural events, and the seasons. The teachers had expressed their thoughts about this question, for example, P1 explained that there were several scientific subjects related to religion, such as human creation, the benefits of plants to the human body, the name of the black hole of the Milky Way galaxy, the formation of water, and the formation of oxygen. Moreover, everything that happens in this universe is contained in the verses of Almighty God. Therefore, science could not conflict with religion. P2 explained that the systems in our bodies, seasons, solar system, the benefit of fasting to the stomach, operation, and order of the human body, and the formation of the universe are associated with religion.

In addition, P3 stated that the creation of human beings, the formation, the existence of the universe in the time of Alak, the realms of all the universes of the Holy Quran took place on the surface beneath the water and groundwater above, then there were social sections of the prophets have short stories in the prophet. P3 also gave several examples that exist in the universe proven in the hadith, and verses of Al-Quran. Therefore, s/he believed that before understanding anything that is in life, Allah has given the answer, as the owner of 18,000 worlds or 70,000 universes, so that everything can be related to verses.

Meanwhile, P4 stated that the child's development, duties of organs, gender formation, managing our organs, our stomach works about fasting, each organ has a specific task, standing drinking water both in terms of health and religion, the prayer of the body movement and the movement of the organs at the same time to be worshiped simultaneously are associated with religion.

P5 also stated that human anatomy, environment, cleanliness, human creation, the order in the universe, the events in nature, the structure of the body, the functioning of the systems in our bodies in order or all of them doing their duty to serve the duty of the human being could serve as a link. Haram bite damage to the digestive system or eating too much damage to the digestive system could be said to be haram. Planets solar moon associates with children could be found in the useful questions.

As it is understood from the statements of the teachers, there are many science concepts and topics to be associated with the religion course. The concepts and subjects of science are used frequently by the teachers of the religion in the course of their courses.

Scientific Issues that Harm Religion

The participants who were interviewed were asked whether any science subjects were damaging to religion. The answers of the teachers of religion course to this question are summarized in Table 14.

Table 14. Scientific Subjects that Harm Religion

Scientific Subjects	P1	P2	P3	P4	P5
Cloning		✓	✓	-	✓
Sperm bank	✓	-	✓	✓	✓
Evolution theory	✓	✓	-	-	-
Euthanasia	-	-	✓	-	-
Milk Bank	✓	-	-	✓	-
Surrogate mother	-	-	✓	✓	✓
Gene exchange, DNA exchange	-	-	✓	✓	✓
GMO food	-	-	✓	-	-
Big-Bang Theory	-	-	✓	-	✓
Organ transplantation	-	-	-	✓	-
Aesthetic	-	-	✓	-	-
Abortion	-	-	✓	-	-
Bombs	-	-	✓	-	-

Based on Table 13, four of five Religious Culture Teachers for sperm science, which the teachers of the religion thought to be damaging to religion, said sperm bank, and three of them responded to cloning, surrogacy, gene exchange, and DNA exchange. While the two teachers gave their answers to the theory of evolution, the milk bank, and Big-Bang, the teachers gave euthanasia, organ transplantation, aesthetics, abortion, and bombs. P1, P2, P3, P4, P5 have expressed their thoughts in which several harmful subjects considered to be against the role of God. They provided some examples that explained the contradiction to teachings in the religion, even the nature of life.

Based on the teachers' perspective, some studies which are carried out under the roof of scientific developments especially in science subjects were seen as objectionable and harmful by them. It is concluded that these studies, which teachers perceived as harmful, were harmful to the moral dimension besides religion. However, in a study that teachers saw as harmful the teachers of the religion course were scientifically incomplete and wrong (Eminoğlu, 2016). For example, the Big-Bang theory did not harm religion, as it overlaps with religion.

CONCLUSION AND RECOMMENDATIONS

The conclusions obtained in this research, which was conducted with the participation of five teachers to obtain information about the use of the concepts and subjects of life sciences in religion courses, are as follows: First, religion teachers make use of different courses related to the subjects they teach, especially life sciences. Second, the use of life sciences by religion teachers has many advantages both for teachers and students, students understand the subject better, they reinforce what they learn, the subject taught is proven, and many examples may be given from life sciences in religion courses. Third, students understand religion courses better and internalize the subject as religion teachers give examples from life sciences when teaching religion, which in turn helps students use what they have learned in daily life and is also something students enjoy. Fourth, students ask questions about many subjects regarding life sciences to their teachers in religion courses. Fifth, religion teachers do not feel competent in life sciences. Last, religion teachers wish to receive in-service training regarding life sciences.

Based on the results obtained from the research, we recommend that since teachers often make use of the concepts of life sciences in religion courses, religion teachers should be provided with the resources of life sciences. An in-service seminar on life sciences can be organized for religion teachers. So that, religion teachers will be able to not only make up for what they do not know about life sciences but also correct their mistakes if they have regarding the concepts of life sciences.

This study was conducted with the teachers. A future study on what are the concepts and subjects of life sciences related to religion can be conducted with life science teachers.

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