

STRENGTHENING RELIGIOUS AND SCIENTIFIC CHARACTER THROUGH NATURE CONTEMPLATION IN THE EXTRACURRICULAR ACTIVITIES OF KELOMPOK KAJIAN ISLAM (KKI): A REVIEW OF THE PERSPECTIVES OF THE QUR'AN AND SCIENCE

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ABSTRACT

The balance between religious values and scientific abilities is one of the important demands in education in this century, especially in the formation of student character. The integration of both can be realized through activities that combine spiritual appreciation with strengthening scientific understanding, one of which is through contemplation of nature in the Kelompok Kajian Islam (KKI) extracurricular. This study aims to describe the process of strengthening religious and scientific character in students by referring to the perspective of the Qur'an and science. The research method uses a descriptive qualitative approach, involving the supervising teacher and active students as research subjects in the Field Experience Practice (PPL) activities. Data collection through observation, in-depth interviews, and field notes, then analyzed data reduction, presentation, and drawing conclusions. The results of the study indicate that contemplation of nature activities encourage the emergence of religious attitudes such as gratitude, awe of God's creation, and awareness of worship, as well as developing scientific character in the form of critical thinking skills and the ability to connect natural phenomena with scientific concepts. The integration of these values is strengthened through the guidance of resource persons who relate verses of the Qur'an to the observed phenomena. Nature contemplation in KKI extracurricular activities is an effective strategy in forming religious and scientific characters simultaneously, with a positive impact on strengthening character education based on direct experience in nature.

Keywords: Religious Character, Scientific, Contemplation Of Nature, Extracurricular, Kelompok Kajian Islam.

INTRODUCTION

Education in the modern era faces significant challenges in shaping the character of the younger generation, balancing religious values with scientific understanding (Mumtazah, 2025). The rapid development of technology and information has both positive and negative impacts on students' mindsets and behavior (Fricticarani et al., 2024). Many students are increasingly critical and open to scientific information, but on the other hand, religious values are often marginalized (Aristawidya, 2024). This raises concerns that the younger generation will lose their moral and spiritual direction if education only emphasizes cognitive aspects without considering character development (Hidayat, 2025).

Extracurricular activities in schools are a strategic space for building student character outside of formal learning hours (Alivia & Sudadi, 2023). One example is the Kelompok Kajian Islam (KKI), which not only teaches the ritual aspects of worship but also provides opportunities for students to reflect on the greatness of God through nature meditation. This activity has great potential to instill religious values while connecting them to the scientific

phenomena they encounter in their surroundings (Putri et al., 2024). However, the practice of nature meditation is still limited to spiritual appreciation (Murtado & Badrudin, 2025), without strengthening the scientific aspect, so the integration of the two is not optimal.

This phenomenon demonstrates the urgent need to design and implement more meaningful nature contemplation activities. By combining the perspectives of the Qur'an and science, these activities are expected to foster religious awareness as well as critical and scientific thinking skills (Rizqi & Bintari, 2015). This research process is directed at understanding how nature contemplation activities in the KKI extracurricular can build religious and scientific character in a balanced manner. Thus, this research not only describes existing practices but also contributes to the development of integrative learning models that are relevant to current educational needs.

Previous research has discussed the role of religious activities and scientific approaches in shaping student character (Rusdiyana, 2018). Adzhar's (2025) research shows that religious activities in schools contribute to increased religiosity, while Azmi et al.'s (2025) study emphasizes that a science-based approach can foster curiosity and critical thinking skills. However, the majority of these studies still separate the religious and scientific domains in their implementation. Few studies have integrated the two fully into a single activity, particularly through the contemplation of nature method based on the Qur'an and science. This gap serves as an important basis for this research to provide a new perspective.

This research focuses on nature contemplation activities as a vehicle for integrating religious and scientific values. Nature contemplation not only invites students to reflect on God's creation but also encourages them to understand natural phenomena through a scientific perspective (Azella, 2025). This approach aligns with the guidance of the Quran, which repeatedly encourages humans to think and learn from His creation (Wakit et al., 2025). Thus, this research presents a novelty in the form of an experiential learning model that simultaneously links spirituality and science.

This research focuses on the ongoing process of strengthening religious and scientific character through nature contemplation activities. The values introduced to students are not left to fester, but are instead nurtured through direct experiences in nature that combine spiritual appreciation and scientific reasoning (Ma'muroh, 2021). A qualitative approach was chosen to allow researchers to deeply explore how students interpret each series of activities and identify interaction patterns that foster the strengthening of both aspects.

Nature contemplation, an integral part of the KKI extracurricular program, is the focus of this study, aiming to understand how this activity shapes students' awareness of the connection between the Kauniyah verses in the Quran and the scientific phenomena surrounding them. This understanding is reflected not only in the knowledge gained but also in the attitudes and behaviors that emerge in everyday life. Through in-depth observations and conversations, this study captures the dynamics of teacher guidance, student involvement, and the interweaving of religious and scientific values that naturally develops.

The aim of this research is to analyze how character building can occur in a learning environment close to nature. This insight can inspire the development of learning programs and student development that align with the needs of the times, while maintaining spiritual roots and mastery of science. The benefits of this research are that it can produce a generation that not only thinks critically and rationally but also possesses steadfastness and a deep sense of gratitude for all of God's creation.

METHODS

The research method used a descriptive qualitative approach. This approach directly

describes and explains events or incidents that occur in the field (Rukajat, 2018). Researchers were able to deeply understand the process of religious and scientific character formation through nature contemplation activities in the KKI extracurricular. The qualitative approach was able to comprehensively explore the meaning, experiences, and perceptions of students and supervising teachers, rather than simply measuring results in numerical form. Researchers were able to obtain a complete picture of how religious and scientific values are internalized, resulting in richer and more in-depth data. The research procedures that were carried out are shown in Figure 1.

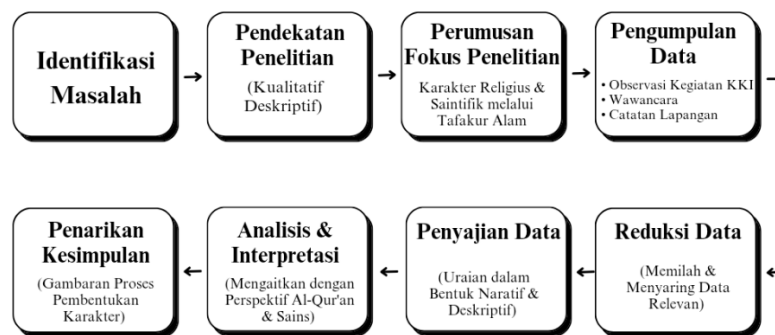


Figure 1. Research Procedure

The research design aims to describe the phenomenon of religious and scientific character formation through nature contemplation in a real-world context. This study was conducted at the Sinsu Park Wonosobo tourist site. Participants in this activity were 25 members of the KKI extracurricular at SMA N 1 Wonosobo, and were attended by one instructor. The resource persons for this activity were the PPL FITK UNSIQ team from the Islamic Religious Education and Physics Education study programs. This study focused on the activity process, interactions between instructors and students, and students' interpretations of the learning experience. With this design, the researcher did not manipulate variables, but rather observed and described conditions as they were in accordance with the reality that occurred in the field.

The research instruments used were observation and in-depth interviews. Observations were conducted to directly observe nature contemplation activities and record students' behavior, interactions, and expressions during the activities. In-depth interviews were conducted with the supervising teacher and several students who were members of the KKI extracurricular activities to explore their experiences, opinions, and interpretations regarding strengthening religious and scientific character. Field notes were also used as a supplementary instrument to record important events during the research process (Rijali, 2018).

The collected data were analyzed using qualitative descriptive analysis techniques. The analysis process was carried out in three stages: data reduction, data presentation, and conclusion drawing (Qomaruddin & Sa'diyah, 2024). In the data reduction stage, information from observations and interviews was selected and sorted according to the research focus (Waruwu, 2024). Next, the reduced data was presented in the form of a narrative description to facilitate understanding and interpretation (Rachmad et al., 2024). The final stage was drawing conclusions by linking the research results to the perspectives of the Qur'an and science, so that a complete picture of the process of forming religious and scientific character in nature contemplation activities was obtained.

RESULTS AND DISCUSSION

Results

Observations conducted during the nature contemplation activities in the KKI extracurricular activity showed the active involvement of participants at every stage of the activity. Students participated in a series of activities with great enthusiasm, starting from preparation for departure, briefing, to implementation in the field. During the activity, harmonious interactions were observed between the instructor, committee, and participants, where the instructor consistently linked the observed natural phenomena with verses of the Qur'an, while students recorded and discussed their findings in groups. Observations also showed that students demonstrated discipline and mutual respect, creating a conducive and meaningful learning atmosphere. The implementation of the nature contemplation activities by the KKI extracurricular activity of SMA N 1 Wonosobo is shown in Figure 2.



Figure 2. Natural contemplation at the Sinsu Park Wonosobo tourist location

Furthermore, this activity facilitates students' direct observation of various natural phenomena, such as the beauty of sweeping mountains, ecosystem processes, and signs of weather changes, which are then linked to scientific concepts. In field discussion sessions, students relate their observations to the learning materials they have learned in class. This process not only fosters a sense of awe for God's greatness but also trains critical and analytical thinking skills. The students' religious and scientific attitudes appear to be aligned, reflected in their habit of linking each observation to moral values and relevant scientific arguments.

The KKI supervisor explained that the initial KKI activities departed from the need to implement Islamic values in a forum that is interesting for students. " *Inna fi khalqis-samawati wal-ardhi wakhtilafil-layli wannahaari la-āyātin li-ulil albāb* " which means " Indeed in the creation of the heavens and the earth, and the alternation of night and day there are signs for men of understanding " (QS. Ali Imran: 190). According to him, this verse is the basis that nature contemplation activities are not just recreation, but a means to train participants to understand the signs of Allah's greatness through direct observation of nature.

In his remarks, the committee chairman emphasized the important role of collaboration between instructors, administrators, and participants in maintaining the quality of the activity. He stated, " Nature contemplation is not just a recreational activity, but part of a deep learning process. We organize each session so that participants have space for discussion. Thus, this activity does not stop in the field, but brings about changes in the participants' perspectives on science and religion. " He then explained that the planning of the activity involved instructors, KKI administrators, and KKI members, so that the activity concept was truly relevant to the interests of the participants. " We hope that this activity will not only inspire, but also leave a lasting impression as a fun and meaningful learning experience," he added.

Meanwhile, one of the KKI members said, " Through this activity, I learned to see natural phenomena from a scientific perspective, but at the same time became more

convinced of the greatness of Allah." He also explained that the group discussions helped deepen my understanding of the concepts discussed. " When I discovered the connection with the verses of the Quran, I felt even more convinced that knowledge and faith complement each other, so the discussion made me realize that knowledge and faith are not separate, but strengthen each other," he said.

The implementation of nature contemplation within the KKI extracurricular activity demonstrates that out-of-class learning that integrates scientific observation with spiritual reflection can provide profound experiences. This activity not only fosters curiosity about natural phenomena but also fosters an awareness of the orderliness of God's creation, which aligns with scientific explanations. Through this process, students gain more comprehensive insights, combining a conceptual understanding of science with the reinforcement of religious values in their daily attitudes and behaviors.

Discussion

1. Meaning of QS. Al-Ghasyiyah: 17-20 and QS. Ali Imran: 190-191

Allah has explained many signs of His miracles and greatness in the Qur'an. Among them in QS. Al-Ghasyiyah verses 17-20 and QS. Ali Imran verses 190-191.

Allah has said in QS. Al-Ghasyiyah verses 17-20 which reads:

God willing

وَالِى السَّمَاءِ كَيْفَ رُفِعَتْ
وَالِى الْجِبَالِ كَيْفَ نُصِبَتْ
وَالِى الْأَرْضِ كَيْفَ سُطِحَتْ

It means:

17. Did they not notice the camel, how it was created?

18. How was the heavens raised?

19. How are mountains erected?

20. How was the earth spread out? (Kementrian Agama RI, 2019)

Surah Al-Ghasyiyah contains information about unbelievers on the Day of Resurrection and the punishment that will be imposed on them, information about believers and the state of heaven that will be given to them as a reward. The command to pay attention to or study the wonders of Allah's creation, as well as the command to the Messenger of Allah to remind his people of Allah's verses, because he is a warner to His people (Kemenag RI, 2010). Verses 17-20 contain educational values, namely educational material related to nature or the environment (Munir, 2008). Allah commands us to pay attention to how camels were created, how the heavens were raised, how mountains were erected, and how the earth was spread out and other miracles of Allah's creation.

According to Quraish Sihab, that Allah swt. owner of heaven and earth. He is the one who created, owns and manages them and knows all the details that happen to both of them (Shihab, Tafsir Al-Misbah Pesan, Kesan dan Keserasian Al-Qur'an, 2006). Because Allah swt. the owner of the heavens and the earth and everything in them, then all His creatures should submit to Him, including humans. That is why, if humans do not want to acknowledge the greatness of Allah SWT. by making it the only place to worship, ask for help, then worship and ask for help from His creatures is called polytheism. These are what is meant in Surah al-Qasyiyah verse 18, so that they reflect and learn from the wonders of what is in the sky, so that they no longer associate partners with Allah SWT.

Allah SWT also says in QS. Ali Imran verse 190-191 which reads:

God willing God willing

Allah's blessings وَ عَلَىٰ جُنُوبِهِمْ وَيَتَفَكَّرُونَ فِي خَلْقِ السَّمٰوٰتِ وَالْاَرْضِ رَبَّنَا مَا خَلَقْتَ هٰذَا بَاطِلًا سُبْحٰنَكَ فَقِنَا عَذَابَ النَّارِ ١٩١

It means:

Indeed, in the creation of the heavens and the earth and the alternation of night and day there are signs (of Allah's greatness) for people of understanding, (namely) those who remember Allah while standing, sitting, or lying down, and think about the creation of the heavens and the earth (while saying), "Our Lord, You did not create all this in vain. Glory be to You. Protect us from the punishment of hell.

QS. Ali Imran verses 190-191 explain a glimpse of His creation and order you to think about it. The purpose of Surah Ali Imran itself is to prove monotheism, oneness and power of Allah SWT. The natural laws that give birth to habits have essentially been determined and regulated by Allah SWT, the Almighty, Almighty (Shihab, 2002).

Allah SWT commands us to observe, reflect on, and draw conclusions from the signs of divinity. Because these signs cannot exist except created by the All-Living, the Most Holy, the All-Savior, the All-Rich, and who does not need anything in the universe. By believing in this, their faith is based on true conviction and not just following the crowd. In the phrase "Li-Ulil Albab " (There are signs for people of understanding). This is one of the functions of reason given to all humans, namely so that they can use their reason to reflect on the signs given by Allah SWT. (Al-Qurthubi, 2008).

The intelligent people are those who constantly think about Allah's creation, contemplate His beauty, and then benefit from the verses of Kauniyah that are spread throughout this universe, while remembering Allah with their hearts, tongues, and limbs. They remember Allah while standing and walking and carrying out the activities of life. They remember Him while sitting in dhikr assemblies or mosques, or while lying down before going to sleep and when resting after activities, and they reflect on the creation of the heavens and the earth as evidence of Allah's Almighty power, saying, "Our Lord! We bear witness that You did not create all this in vain but that there is wisdom and a purpose behind it all. Glory be to You, we bear witness that You have no partner. We ask You to bestow success so that we may do good deeds in order to carry out Your commands, and protect us from Your wrath so that we are saved from the punishment of Hell.

Tafakkur is the mirror of a believer, he can see all the good and bad through it. And some things that must be pondered during tafakkur are the threats and promises that are prepared for the next afterlife, namely the Day of Resurrection, the Day of Resurrection, Heaven and all the pleasures that are in it, as well as hell and all the torment that is in it.

2. The Virtue of Contemplation

In one hadith, the Prophet said,

تفكر ساعة خير من عبادة سنة

“A moment of thought is better than a year of worship.”

Faith and Islam are the natural qualities that Allah (Subhanahu wata'ala) has bestowed upon every human being since birth (fitrah). However, this natural quality is not guaranteed to last. In fact, it seems easily lost and diminished if not properly nurtured. To develop and nurture this faith, Allah (Subhanahu wata'ala) has given every human being two provisions and two means. This is because every human being is born in a state of fitrah. People become Jews, Christians, Zoroastrians, or other religions due to other influences. The proof is that a child is born in a state of fitrah like a white cloth... The two tools in question are the heart and mind (intellect), while the two means are Allah (Subhanahu wata'ala) and His creation (creatures). What we need to understand is that these two provisions and two means are capital that must not be misused. Because each has a different role. The heart is to nurture or protect faith, while the mind is to develop or deepen it. If used incorrectly, not faith will be gained, but rather, misguidance will likely approach.

It is important to understand that if the heart's duty is to remember Allah Subhanahu wata'ala, then the mind's duty is to think about anything other than Allah Subhanahu

wata'ala. The mind must be courageous in exploring and recognizing the signs of Allah Subhanahu wata'ala's greatness. By recognizing more signs of Allah Subhanahu wata'ala's greatness, humans will realize that they are only a small part of the universe of creation. Even if humans are able to think extensively about creation, they are only capable of that much. They have no ability whatsoever to create what they think about. Let alone create everything they think about, they cannot even create a single grain of rice. By realizing things like this, humans have cultivated the faith that Allah Subhanahu wata'ala has bestowed upon them.

Al-Ghazali discusses Taffakur in depth through his work, namely "the book of Ihya' Ulum al-Din " in the ninth book entitled " al-tafakur ", which is located in the chapter " al-munjiyat ". From a terminological perspective, al-Ghazali explains that tafakur is the work of reason and not the work of the sense of sight, although sometimes it can come through the words of vows and ta'mmul at certain times. Tafakur is defined as an effort to bring two premises of belief into a certain arrangement in the heart with the aim of giving birth to a third premise of belief. The presence of these two beliefs in a certain arrangement will give rise to a third belief after the mind is moved appropriately (Taqwa & Septrianto, 2024).

Al-Ghazali, in his "Al-Ihya," explains that contemplation is an integral part of worship, involving inward reflection on aspects of religion. Through this contemplation, one can acquire praiseworthy qualities such as repentance, patience, gratitude, and fear of God. Contemplation on the greatness of God is the highest level in the spiritual journey undertaken with sincerity and perseverance. Contemplation of nature helps us realize the greatness and majesty of God through His creation, thereby increasing our faith and piety. By contemplating the beauty and benefits of nature, we will increasingly recognize the blessings God has bestowed upon us and increase our gratitude. Contemplation of nature fosters awareness of the importance of protecting and preserving nature, as it is God's creation that we must protect. Contemplation of nature can be a learning motivation for students, as they can learn directly from nature about the various phenomena and miracles that occur. In addition, it can provide calm and peace of mind, help reduce stress and improve mental health.

3. The Order of the Universe

The universe is a gigantic system that operates in remarkable harmony, governed by consistent and predictable laws (Del Medico, 2023). In general, this order is guided by the laws of physics, which provide the basic framework for all natural events (Azella, 2025). Newton's law of gravity, for example, ensures that the planets remain in their orbits around the sun, the moon continues to orbit the Earth, and objects on the Earth's surface are attracted to its center (Erwin, 2017). This gravity also maintains a stable distance between the Earth and the sun, ensuring that temperature, climate, and living conditions remain within limits that allow living things to survive. One of the most obvious manifestations of gravity on Earth is the phenomenon of ocean tides (Muizza et al., 2025). The gravitational pull of the moon and sun on the Earth creates a regular daily rhythm of high and low tides. This phenomenon not only affects the lives of fishermen and marine navigation but also plays a vital role in maintaining nutrient circulation in coastal ecosystems, thus supporting the life of marine life.

Regularity is also evident in the alternation of day and night due to the Earth's rotation on its axis (Rizkilah et al., 2025). With a period of approximately 24 hours, this rotation regulates the biological rhythms of living things, including humans, influencing sleep patterns, metabolism, and behavior. Furthermore, the Earth's movement around the Sun in an elliptical orbit produces the changing seasons, which play a major role in regulating crop cycles, animal migration, and global weather patterns. Towering mountains are also part of

this natural order (Sholihah, 2025). Geologically, the presence of mountains not only balances the Earth's layers but also plays a role in the hydrological cycle. Mountain slopes are home to dense forests that absorb rainwater, store it as reserves, and then slowly release it into rivers. From a scientific perspective, mountains also help regulate the movement of tectonic plates and reduce the risk of major damage from shifts in the Earth's crust (Mubarak et al., 2025).

Further regularity is evident in the oxygen recycling system in the atmosphere. The process of photosynthesis in green plants and phytoplankton in the ocean produces the oxygen needed for living things to breathe, while simultaneously absorbing the carbon dioxide released by animal and human respiration (Ikhsan & Prasetyo, 2025). Finally, the balance of the ecosystem is clear evidence of a more detailed regularity. Each living thing has its own role, such as producers providing energy through photosynthesis, consumers utilizing that energy, and decomposers breaking down the remains of organisms into nutrients that return to the soil. These interactions form an interdependent web of life. If one component is disturbed, the balance can collapse, which in turn affects the entire system (Daud & Agustini, 2024). By understanding this regularity from the broadest to the most detailed, we can see that the universe is not a collection of random events, but rather a system orchestrated with extraordinary precision. From a scientific perspective, this regularity is the result of the consistent operation of natural laws. From a spiritual perspective, it is a sign of the greatness and wisdom of the Creator, for which we should be grateful.

4. Science as a Way to Know and Get Closer to Allah SWT.

Science is not merely a collection of theories and laws that explain natural phenomena, but also a means that can guide humans to recognize the greatness of their Creator (Napitupulu, 2017). Through the study of science, humans are invited to delve into the order, beauty, and complexity of Allah SWT's creation, thus growing awareness that all of this does not occur by chance (Barmawi & Muzakkie, 2024). Knowledge of atomic structure, the mechanisms of cellular life, and the dynamics of the cosmos, essentially reveal the signs (ayat kauniyah) that Allah has placed in the universe (Purwanto, 2015). Every scientific phenomenon, when studied with a clear heart, will lead to the recognition that behind the consistent laws of nature, there is a Being Who is All-Ruling. Every natural law discovered by humans is only a fraction of His infinite wisdom. The more deeply science uncovers the secrets of nature, the more apparent the signs of His greatness become to the heart that is willing to reflect. Contemplation of nature is part of contemplating the creation of Allah SWT as a sign of the greatness of the creator who makes everything run according to its measure (Anwar, 2019).

From the perspective of the Qur'an, science can be a bridge to understanding God's verses, both written (the qouliyah verses) and those unfolding in nature (the kauniyah verses) (Wakit et al., 2025; Mahyarni & Alpizar, 2024). When physics explains the law of gravity that maintains the stability of the Earth's orbit and celestial bodies, a believer sees it as a manifestation of God's power that maintains the balance of the cosmos (Hamzah & Muniroh, 2016). When biology describes the process of photosynthesis that provides oxygen and energy for life, a believer will see it as evidence of God's compassion for all His creatures (Mangka et al., 2022). Thus, science and faith are not contradictory, but rather mutually reinforcing, and scientific discovery becomes a means to increasingly submit to and be grateful to Him (Masrur, 2016). This awareness is further strengthened when one directly experiences a learning process that combines scientific observation with spiritual contemplation, such as in nature meditation (Rofiq, 2023; Marsyam, 2021). Gazing at a star-studded night sky while understanding the laws of light and cosmic distance, or watching a river flow while studying the hydrological cycle, can foster a profound sense of wonder. At

this point, science functions not merely as a tool for rational analysis but also as a driving force for remembrance, gratitude, and a growing closer to Allah SWT. Therefore, viewing science as a path to knowing God not only enriches insight but also strengthens a religious character balanced with scientific understanding.

CONCLUSION

Nature contemplation activities within the KKI extracurricular have proven effective in strengthening students' religious and scientific character through a combination of spiritual appreciation and scientific thinking. This process encourages students to view natural phenomena as signs of God's greatness and as scientific subjects that can be analyzed critically. The interaction between resource persons, students, and the natural environment creates a comprehensive learning experience, which positively influences thinking, attitudes, and behavior in everyday life. The results of this study have an impact on the formation of a generation that is better prepared to face future challenges with a balance between intellectual intelligence, spirituality, and scientific attitudes, and open up opportunities for the application of this model in various educational settings. With integrated character building, students are able not only to understand scientific concepts but also to internalize moral values that strengthen their self-identity. This approach has the potential to become a strategic guideline in the development of educational programs that combine religious and scientific values in a balanced manner.

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