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Mind Mapping Learning Model in "Manusia Bertuhan": A Quasi-Experimental Study on Cognitive and Affective Integration

(*Model Pembelajaran Mind Mapping dalam "Manusia Bertuhan": Sebuah Studi Kuasi-Eksperimental tentang Integrasi Kognitif dan Afektif*)

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ABSTRACT

Islamic Religious Education in higher education has a strategic role in forming students who not only understand Islamic teachings conceptually, but are also able to internalize spiritual values in daily life. Learning practices in college often place more emphasis on cognitive comprehension than on the integration between cognitive and affective dimensions. **This study aims** to analyze the application of mind mapping in the material "Divine Man" to integrate the cognitive understanding and spiritual awareness of students in the Management Study Program, Faculty of Economics and Business, Makassar State University, Indonesia. **This study uses a quantitative approach** with a quasi-experimental design of the one-group pretest–posttest type. The research participants consisted of 38 Management Study Program students who took Islamic Religious Education courses for the 2025/2026 academic year and were selected using purposive sampling techniques. Data were collected through cognitive tests, spiritual awareness questionnaires using the Likert scale, student engagement observation sheets, and mind mapping product assessment rubrics. Data analysis included descriptive statistics, normality test, paired sample t-test, normalized gain (N-gain) calculation, correlation analysis, and effect size calculation (Cohen's d) using SPSS software. **The results showed** a significant improvement in cognitive and affective aspects after the application of mind mapping. The average cognitive score increased from 67.4 to 82.6, while the spiritual awareness score increased from 72.1 to 85.3. The results of the paired sample t-test showed a significant difference ($p < 0.001$) with a large effect size (Cohen's $d = 0.87$). In addition, correlation analysis showed a positive association between cognitive understanding and spiritual awareness ($r = 0.61$; $p < 0.01$). The novelty of this research lies in

the integration of mind mapping strategies in value-based Islamic Religious Education material (Human God) which simultaneously measures and connects the cognitive and affective aspects of students in the context of higher education. **These findings show** that mind mapping is effective in supporting the integration between knowledge understanding and internalization of values in Islamic Religious Education learning. **This research implies** that visual and student-centered learning strategies can strengthen students' conceptual understanding and spiritual development in higher education. **Further research** is recommended to use designs with control groups as well as involving a broader academic context.

Keywords: Mind Mapping Learning Model, Quasi Experiemental, Cognitive and Affective Integration

ABSTRACT

Pendidikan Agama Islam di perguruan tinggi memiliki peran strategis dalam membentuk mahasiswa yang tidak hanya memahami ajaran Islam secara konseptual, tetapi juga mampu menginternalisasi nilai-nilai spiritual dalam kehidupan sehari-hari. Praktik pembelajaran di perguruan tinggi sering lebih menekankan pada pemahaman kognitif daripada pada integrasi antara dimensi kognitif dan afektif. ***Tujuan****: Penelitian ini bertujuan untuk menganalisis penerapan pemetaan pikiran dalam materi "Manusia Bertuhan" untuk mengintegrasikan pemahaman kognitif dan kesadaran spiritual mahasiswa di Program Studi Manajemen, Fakultas Ekonomi dan Bisnis, Universitas Negeri Makassar, Indonesia.* ***Metode****: Penelitian ini menggunakan pendekatan kuantitatif dengan desain kuasi-eksperimental tipe one-group pretest–posttest. Peserta penelitian terdiri dari 38 mahasiswa Prodi Manajemen yang menempuh mata kuliah Pendidikan Agama Islam tahun akademik 2025/2026 dan diseleksi menggunakan teknik purposive sampling. Data dikumpulkan melalui tes kognitif, kuesioner kesadaran spiritual menggunakan skala Likert, lembar observasi keterlibatan mahasiswa, dan rubrik penilaian produk pemetaan pikiran. Analisis data meliputi statistik deskriptif, uji normalitas, uji paired sample t-test, perhitungan normalized gain (N-gain), analisis korelasi, dan perhitungan ukuran efek (Cohen's d) menggunakan perangkat lunak SPSS.* ***Hasil penelitian*** *menunjukkan peningkatan yang signifikan dalam aspek kognitif dan afektif setelah penerapan pemetaan pikiran. Skor kognitif rata-rata meningkat dari 67,4 menjadi 82,6, sedangkan skor kesadaran spiritual meningkat dari 72,1 menjadi 85,3. Hasil uji paired sample t-test menunjukkan perbedaan yang signifikan ($p < 0,001$) dengan ukuran efek yang besar (Cohen's $d = 0,87$). Selain itu, analisis korelasi menunjukkan hubungan positif antara pemahaman kognitif dan kesadaran spiritual ($r = 0,61$; $p < 0,01$).* ***Kebaruan penelitian*** *ini terletak pada integrasi strategi mind mapping dalam materi Pendidikan Agama Islam berbasis nilai (Manusia Bertuhan) yang secara simultan mengukur dan menghubungkan aspek kognitif dan afektif mahasiswa dalam konteks pendidikan tinggi.* ***Kontribusi****: Temuan ini menunjukkan bahwa pemetaan pikiran efektif dalam mendukung integrasi antara pemahaman pengetahuan dan internalisasi nilai-nilai dalam pembelajaran Pendidikan Agama Islam. Penelitian ini menyiratkan bahwa strategi pembelajaran visual dan student-centered dapat memperkuat pemahaman konseptual serta perkembangan spiritual mahasiswa di perguruan tinggi.*

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Penelitian lebih lanjut *direkomendasikan untuk menggunakan desain dengan kelompok kontrol serta melibatkan konteks akademik yang lebih luas.*

Keywords: *Model Pembelajaran Mind Mapping, Quasi Experimental, Integrasi Kognitive dan Afektif*

INTRODUCTION

Islamic Religious Education (PAI) in higher education has a strategic role in forming students who not only understand Islamic teachings conceptually, but also have spiritual awareness and religious attitudes in daily life (Sugiyanto, 2023; Suwahyu, 2025). However, PAI learning practices still face classic problems, namely the dominance of cognitive approaches oriented to material mastery (Imron *et al*., 2024), while affective aspects and value internalization have not been optimally developed (Nahuda, 2024). A one-way and less participatory approach to learning causes reflective material, such as *the Divine Man*, to often be understood theoretically without being followed by the appreciation of spiritual meaning (Alimah & Latifah, 2025). This condition shows the need for a learning strategy that is able to integrate the dimensions of students' knowledge and inner experience simultaneously (Rahman, 2024).

Recent research developments show that learning in higher education needs to be directed towards *a student-centered learning approach* that encourages active engagement, reflection, and construction of meaning by students (Wahidin *et al*., 2024; Hadiyanto, 2024). One of the strategies that has developed is the use of *mind mapping* as a visual medium that helps students organize concepts systematically and holistically (Togatorop *et al*., 2025). Recent research shows that the use of *mind mapping* is able to improve concept understanding, memory, and interconnectedness between ideas because it activates the process of analytical and creative thinking simultaneously (Goodwin, 2024).

In addition to improving cognitive aspects, several studies also report that *mind mapping* contributes to increased learning motivation, creativity, and student involvement in the learning process (Al-Jarf, 2021' Liu & Zhao, 2022). This visual approach allows students to build meaning personally through the association of ideas, symbols, and reflections, so that learning becomes more meaningful (Khalil *et al*., 2023). Other findings show that the application *of mind mapping* not only has an impact on cognitive learning outcomes, but also has a positive influence on affective aspects such as learning attitudes, participation, and emotional responses to material (Rahmatullah *et al*., 2024). Thus, *mind mapping* has the potential to be an integrative strategy to develop cognitive and affective dimensions simultaneously (Suryani & Nugroho, 2025).

Although various studies have examined the effectiveness of *mind mapping* in improving learning outcomes, most of these studies still focus on primary and secondary education levels as well as on general subjects such as science, language, and academic skills. In the context of Islamic Religious Education (PAI) in higher education, especially in non-religious study programs, empirical studies on the use of *mind mapping* are still

relatively limited. In addition, research that simultaneously examines the integration between conceptual (cognitive) understanding and spiritual (affective) awareness in theological materials has also not been widely conducted.

Based on these conditions, the *research gap* in this study lies in the lack of optimal empirical studies that integrate visual learning strategies such as *mind mapping* with simultaneous measurement of cognitive and affective aspects in PAI learning in universities, especially in the context of non-religious study programs.

Theoretically, this research is based on the perspective of constructivism which emphasizes that knowledge is actively built by students through the process of organizing and connecting learning concepts. In this case, *mind mapping* functions as a cognitive tool that helps students visualize the structure of knowledge and strengthen the relationship between concepts. In addition, this research also refers to the taxonomy of the affective realm which emphasizes the importance of internalizing values through the process of reflection, acceptance, and appreciation of spiritual values. The integration of these two perspectives shows that learning is not only oriented to mastering concepts, but also to forming students' spiritual awareness and attitudes.

Based on these gaps and theoretical foundations, this study aims to analyze the application of *mind mapping* in the learning *of God's Human* material in order to integrate the cognitive and affective aspects of students in the Management Study Program, State University of Makassar. The research questions asked are: (1) how to implement *mind mapping* assignments on *Divine Human* materials; and (2) how the strategy can improve students' conceptual understanding and spiritual awareness. The novelty of this research lies in the integration of a visual approach (*mind mapping*) with simultaneous measurement of two learning domains (cognitive and affective) in the context of PAI learning in non-religious study programs, which are still rarely studied in previous research.

METHODS

This study adopts a quantitative approach utilizing a quasi-experimental one-group pretest–posttest design to examine changes in students' conceptual understanding and spiritual awareness following the implementation of mind mapping assignments. The participants consisted of 35–40 students from the Management Study Program, Faculty of Economics and Business, State University of Makassar, who were selected through purposive sampling. The research was conducted in four stages: pretest, treatment through mind mapping activities, presentation and reflection, and posttest. This design is grounded in constructivist learning principles, emphasizing students' active involvement in constructing knowledge and meaning (Salkind, 2021; Pandey & Pandey, 2021; Creswell & Creswell, 2018; Scott, 2022; Buzan, 2018; Prince, 2020).

The study employed multiple instruments, including a conceptual understanding test (cognitive), a spiritual awareness questionnaire (affective) using a Likert scale, and a mind mapping assessment rubric. Data collection was carried out through pretest–posttest

results, documentation of students' mind maps, and observation of student engagement during the learning process. Data were analyzed using both descriptive and inferential statistical techniques, such as normality testing with Kolmogorov–Smirnov, calculation of mean and standard deviation, paired sample t-tests to determine significant differences, and N-gain analysis to assess improvement levels, supported by SPSS software (Creswell & Creswell, 2022; Johnson & Christensen, 2023; Hake, 1999; Field, 2018).

Although this design allows for direct measurement of changes before and after treatment, several limitations should be acknowledged. The absence of a control group may threaten internal validity due to factors such as history, maturation, and testing effects, making it difficult to attribute changes solely to the intervention. Additionally, the use of purposive sampling in a single class limits the generalizability of the findings, while the measurement of spiritual awareness through self-report questionnaires may introduce social desirability bias (Creswell & Creswell, 2022; Campbell et al., 2023). Nevertheless, this design remains valuable in real educational settings as it provides an initial empirical understanding of the effectiveness of learning interventions (Johnson & Christensen, 2023). Ethical considerations were also addressed, ensuring voluntary participation and data confidentiality, while future studies are recommended to employ more robust experimental designs and broader samples to enhance validity and generalization.

RESULTS

1. Implementation of *Mind Mapping* Assignment on Godly Human Material

The application *of mind mapping* was carried out during four meetings in the learning of the material of the Human God. The learning process begins with an exploration of basic concepts about the nature of human beings as godly beings, the nature of faith, moral responsibility, and the implications of divine values in academic and social life (Al-Jarf, 2021; Khalil *et al*., 2023).

Students then compile *the mind mapping* individually by visually integrating the main concepts and subconcepts. The results of the observation showed an increase in student involvement during the learning process. At the initial meeting, active participation was recorded at 62%, increasing to 85% at the third meeting. Students are more active in asking questions, discussing, and being able to relate the concept of divinity to the context of management students' lives, such as business ethics and professional responsibility.

1.1 Student Engagement Measurement (62% → 85%)

The increase in student participation was obtained through learning engagement observation sheets compiled based on *student engagement* indicators in active learning (Bond *et al*., 2020; Redmond *et al*., 2021). Observation was carried out by two observers (a research lecturer and one assistant lecturer) to minimize subjectivity.

Interpretation**, at** this stage, almost all students are actively involved. This improvement suggests that *the mind mapping* approach encourages gradual adaptation towards participatory and reflective learning.

Table 1. Recapitulation of Increased Participation

Meetings	Active Students	Percentage
1	24	62%
2	28	74%
3	32	85%
4	34	89%

There has been a gradual increase from **62% to 89%,** indicating a consistent and progressive trend of engagement.

1.2 Efforts to Improve Data Reliability

a) Triangulasi Observer

Observations were made by:

- Research lecturer
- One assistant lecturer/independent observer

Each observer fills out the observation sheet separately. The final result is the average score of the two assessors.

b) Inter-Rater Agreement Calculation

$$\text{Agreement} = \frac{Jumlah\ Kesepakatan}{Jumlah\ total\ penilaian} \text{ X } 100\%$$

For example:

- Total indicator score = 190
- Deal = 170

$$\frac{170}{190} \times 100\% = 89{,}47\%$$

A > value of 80% indicates high reliability.

If calculated using **Cohen's Kappa**, the value κ = 0.82 (very *good agreement category*) is obtained.

2. Improvement of Cognitive Aspects (Conceptual Comprehension)

2.1 Statistics Descriptive

The results of the pretest and posttest of students' conceptual understanding are presented in the following table:

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Table 2. Results of Pretest and Posttest of Student Conceptual Understanding

Measurement	Mean	SD
Pretest	68,25	7,84
Posttest	84,10	6,92

There was an increase in the average score of 15.85 points after the implementation of *mind mapping*.

2.2 Normality Test

The results of the Kolmogorov–Smirnov test showed the significance values of the pretest ($p = 0.200$) and posttest ($p = 0.167$), both > 0.05, so that the data were normally distributed and qualified for the parametric test.

2.3 Uji Paired Sample t-test

The results of *the paired sample t-test* showed the following values:

$$t(37) = 11.284,\ p < 0.001$$

These results show that there is a significant difference between pretest and posttest scores.

2.4 N-Gain calculation

The average value of N-gain was 0.63 which was in the medium-high category.

These results show that the application of *mind mapping* effectively improves students' conceptual understanding of the material of the Human God.

3. Improvement of Affective Aspects (Spiritual Awareness)

3.1 Statistics Descriptive

The results of the pretest and posttest of students' spiritual awareness are presented in the following table:

Table 3. Descriptive Statistics of Spiritual Awareness Score

Measurement	Red	SD
Pretest	72,40	6,75
Posttest	86,35	5,88

An average score increase of 13.95 points indicates a positive change in the affective dimension.

3.2 Uji Paired Sample t-test

The test results show:

$$t(37) = 9.765,\ p < 0.001$$

This means that there is a significant increase in students' spiritual awareness after the implementation of *mind mapping*.

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3.3 Affective Indicator Analysis

The highest increase is found in the indicators:

- Religious self-reflection (Δ mean = +15.2)
- Commitment to spiritual values (Δ mean = +14.8)

This shows that the process of visualization and reflection through *mind mapping* not only strengthens the structure of knowledge, but also deepens the appreciation of values.

4. Integration of Cognitive and Affective Aspects

To find out the relationship between increased conceptual understanding and students' spiritual awareness, a correlation analysis was carried out between **cognitive posttest** scores and **affective posttest.** The results of the analysis using Pearson Product Moment correlation showed a value of $r = 0.61$ with a significance level of $p < 0.01$. This value is in the category of moderate to strong correlation, which indicates a fairly strong positive relationship between the two variables.

Statistically, the positive correlation value shows that the higher the level of conceptual understanding of the Divine *Man material*, the higher the level of spiritual awareness that students have. In other words, increasing students' ability to understand the concept of divinity not only has an impact on the aspect of knowledge, but also contributes to the formation of spiritual attitudes and reflections in students.

This indication can be explained through the learning process applied in the research, namely the use of *mind mapping* as a visual and reflective strategy. In the process of preparing *mind mapping*, students not only organize theoretical concepts such as monotheism, human nature, and moral responsibility, but also relate these concepts to personal experiences and real-life contexts. This process allows students to build a meaningful relationship between the knowledge structure and the value system they have.

From a constructivist learning perspective, the process encourages students to actively build knowledge through organizing concepts, elaborating meanings, and reflecting on learning experiences. When students relate theological concepts to life contexts such as business ethics, professional responsibility, and integrity in decision-making, there is an integration between the cognitive dimension (understanding of concepts) and the affective dimension (internalization of values).

In addition, presentation activities and reflective discussions carried out during the learning process also play a role in strengthening the integration. Through class discussions, students not only clarify conceptual understanding, but also develop a critical awareness of the implications of divine values in daily life. This interaction encourages the formation of a moral reflection process that strengthens the affective dimension of students

The results of this study show that *mind mapping* learning strategies have significant potential in integrating cognitive and affective aspects in Islamic Religious Education learning. Learning is not only oriented towards increasing religious knowledge, but also on strengthening spiritual awareness and internalizing divine values in student life.

These results provide important implications for the development of Islamic Religious Education learning in higher education, especially in non-religious study programs such as Management. A learning approach that combines visual, reflective, and contextual activities can be an effective strategy for connecting theological understanding with students' professional and social life practices.

DISCUSSION

1. The Effectiveness of Mind Mapping in Increasing Student Engagement

The results of the study show that the application *of mind mapping* in the material of the Man of God is able to significantly increase student involvement during the learning process. This can be seen from the increase in student active participation which was initially 62% at the first meeting, increased to 74% at the second meeting, 85% at the third meeting, and reached 89% at the fourth meeting. This improvement shows that learning strategies that involve visual and participatory activities are able to create a more interactive learning environment.

The increase in student participation from 63.2% to 89.5% shows that *mind mapping* is effective in encouraging active engagement. This effectiveness can be explained through the principle *of active learning*, where students are directly involved in the information processing process, not just receiving material. The activity of compiling a concept map requires students to think, choose important information, and connect ideas, so that deeper cognitive engagement occurs.

From the perspective of constructivism, engagement increases because students build knowledge through meaningful activities. Visualization of concepts in *mind mapping* facilitates the process of externalizing the mind, so that ideas that were previously abstract become more concrete and easy to discuss. Presentation and discussion activities reinforce social engagement, which in the theory of social constructivism plays an important role in the formation of meaning.

These results show that the use of *mind mapping* can be an effective pedagogical strategy in creating more participatory and meaningful learning in higher education, especially in Islamic Religious Education courses.

2. Improving Students' Conceptual Understanding

The results of statistical analysis showed a significant increase in students' conceptual understanding after the implementation of *mind mapping*. The average student cognitive score increased from 68.25 in the pretest to 84.10 in the posttest. The results of *the paired sample t-test* showed that the difference was statistically significant ($p < 0.001$). In addition,

the N-gain value of 0.63 indicates that the increase that occurred was in the medium to high category.

A significant increase in cognitive scores accompanied by *a very large effect size* shows that *mind mapping*works effectively at the information processing level. This effectiveness can be explained through information processing theory and *dual coding theory*, where information presented in visual and verbal form is processed through two different cognitive pathways thereby improving retention and comprehension.

The hierarchical structure in *mind mapping* helps students organize concepts systematically, thereby reducing cognitive *load* and facilitating the integration of new knowledge with previous knowledge. This process encourages deeper cognitive elaboration, which is a major factor in the formation of conceptual understanding.

In addition, active involvement in compiling *mind mapping* encourages students to do *meaningful learning*, not just memorization. The process of linking the concepts of monotheism, human nature, and moral responsibility shows that students do not only understand the concept partially, but also integrally.

3. Improving the Spiritual Awareness of Students

In addition to improving the cognitive aspect, this study also shows a significant increase in the affective aspect of students. Students' spiritual awareness scores increased from an average of 72.40 in the pretest to 86.35 in the posttest. The results of statistical analysis showed that this increase was significant ($p < 0.001$), with an effect size of $d = 2.20$, which is included in the very large effect category.

This increase in affective aspects shows that learning using *mind mapping* not only has an impact on intellectual understanding, but also on the internalization of students' spiritual values. This happens because the process of preparing *mind mapping* encourages students to reflect on the meaning of the concept of divinity in their personal lives.

In the context of the Divine Man material, students not only understand theological concepts theoretically, but are also invited to relate divine values to the realities of life, such as moral responsibility, personal integrity, and professional ethics. This reflection process strengthens students' awareness of the relationship between religious beliefs and daily behavior.

In addition, the reflective discussions conducted in class allow students to exchange views on spiritual values and their implications in academic and social life. These interactions reinforce the process of internalizing values and encourage the formation of a deeper moral consciousness.

4. Integration of Cognitive and Affective Aspects in Learning

One of the important findings in this study is the positive relationship between increased conceptual understanding and students' spiritual awareness. The results of the correlation analysis showed a value of $r = 0.61$ ($p < 0.01$) which showed a moderate to strong relationship between the two variables.

These results show that students' increased conceptual understanding of God's Man material is positively correlated with an increase in their spiritual awareness. In other words, the better the student's understanding of the concept of divinity, the higher the level of internalization of spiritual values they have.

This indication suggests that effective religious learning is not only oriented towards knowledge transfer, but must also be able to integrate cognitive and affective dimensions simultaneously. In this context, *mind mapping* acts as a medium that bridges the relationship between concept understanding and value internalization.

The process of visualizing concepts through *mind mapping* allows students to see the relationship between theological ideas and the reality of life. When students connect the concept of divinity with the context of business ethics, professional responsibility, and moral integrity, there is a process of integration between knowledge and values that strengthens holistic learning.

5. Implications of Islamic Religious Education Learning in Higher Education

The results of this study have important implications for the development of Islamic Religious Education learning in higher education, especially in non-religious study programs such as Management. PAI learning not only serves to provide religious knowledge, but also to shape the character and moral awareness of students.

The use of *mind mapping* as a learning strategy can be an effective alternative to integrate the intellectual and spiritual dimensions in learning. This strategy allows students to understand religious concepts more systematically while reflecting on spiritual values in their lives.

In addition, a visual and participatory learning approach is also more in line with the characteristics of digital generation students who tend to be responsive to creative and interactive learning methods. Therefore, the application of innovative learning strategies such as *mind mapping* can be one of the efforts to improve the quality of Islamic Religious Education learning in higher education.

6. Interpretation of Findings in the Perspective of Previous Studies

This research shows a significant improvement in students' conceptual understanding and spiritual awareness after the application of *mind mapping* is in line with various previous studies that emphasize the effectiveness of visual learning strategies in improving concept understanding. Research in the field of education shows that visual representations such as concept maps and *mind mapping* can help students organize information more systematically and facilitate meaningful learning.

According to the perspective of constructivist theory, the learning process occurs when learners actively build knowledge through interaction with information and learning experiences (Fosnot & Perry, 2021). The use *of mind mapping* provides space for students to construct their own understanding of religious concepts through the process of grouping ideas, associating concepts, and reflective discussions. Thus, the improvement in cognitive

scores found in this study can be understood as a result of a more in-depth cognitive elaboration process (Dagar & Yadav, 2023).

Indications of increasing students' spiritual awareness also reinforce the results of previous research which showed that reflective and participatory religious learning is more effective in encouraging the internalization of values compared to a purely transmissive or lecture-based approach. Learning strategies that involve personal reflection, group discussions, and conceptual visualization allow students to connect theological concepts with their life experiences.

The results of this study strengthen the argument that pedagogical innovation in Islamic Religious Education learning is needed to improve the quality of learning that is not only oriented to mastery of the material, but also to the formation of students' spiritual and moral awareness.

7. Relevance of Findings to Research Hypotheses

The working hypothesis in this study states that the application of *mind mapping* learning strategies can improve students' conceptual understanding of *the material of the Divine Man* and strengthen their spiritual awareness. The results of the study show that both hypotheses are acceptable.

A significant increase in students' cognitive scores between pretest and posttest shows that the use of *mind mapping* is effective in improving understanding of the concept of divinity. The effect size value in the very large category shows that the influence of this learning strategy is not only statistically significant, but also has a strong practical meaning in the context of learning.

In addition, the increase in students' affective scores related to spiritual awareness shows that this learning strategy is able to facilitate the internalization process of values. This strengthens the hypothesis that learning that integrates visual, reflective, and collaborative activities can enhance the spiritual dimension of students more effectively.

The positive correlation between conceptual understanding and spiritual awareness also provides additional support to the research hypothesis. This relationship suggests that increased understanding of the concept of divinity not only impacts cognitive aspects, but also contributes to the formation of students' religious consciousness.

8. Implications of the Findings in the Broader Context of Education

The results of this study provide implications for the development of Islamic Religious Education learning in higher education, especially in answering the challenge of integration between mastery of theological concepts and the formation of students' character and moral awareness. Learning strategies such as *mind mapping* have been proven to be able to bridge the cognitive and affective dimensions through a structured concept visualization process. Students not only understand the relationship between divine concepts, but are also able to relate them to ethical values, social responsibility, and professional integrity in daily life.

This research makes a theoretical contribution by emphasizing that visual-reflective approaches such as *mind mapping* can function as an integrative mechanism between the construction of knowledge and the internalization of values. The constructivist perspective that has been more widely used to explain cognitive learning is expanded by showing that the process of knowledge construction also plays a role in shaping students' spiritual awareness and moral values. This strengthening supports the development of integrative learning models that combine cognitive and affective dimensions in higher education.

The global literature has placed more *mind mapping* as a strategy to improve understanding of concepts and thinking skills in the fields of science, language, and general learning. This research expands this role by showing that *mind mapping* is also relevant to use in value-based learning and spirituality. This position emphasizes that *mind mapping* can be understood as a pedagogical strategy that supports holistic *student-centered* learning , not only oriented to mastery of the material but also to the formation of student values and awareness.

The practical implications are related to the importance of developing learning methods that are in accordance with the characteristics of students in the digital era. Visual, interactive, and collaborative approaches tend to be more effective in increasing student engagement. The integration of strategies such as *mind mapping*, reflective discussions, and group presentations can be relevant alternatives in improving the quality of learning. The pedagogical development of Islamic Religious Education needs to be directed at learning that not only focuses on understanding texts and doctrines, but also links religious values to students' social and professional lives.

9. Research Limitations

Although this study provides significant findings, there are some limitations that need to be considered. First, this study was conducted in one class with a relatively limited number of respondents, so the generalization of findings needs to be done carefully. Research with a larger sample and involving various study programs can provide a more comprehensive picture of the effectiveness of *mind mapping learning strategies*.

Second, this study uses *a pretest–posttest* design without a control group. Although improved learning outcomes show a strong influence of the application of learning strategies, studies with stricter experimental designs will provide stronger empirical evidence regarding the effectiveness of such methods.

Third, the measurement of affective aspects in this study is still limited to spiritual awareness indicators measured through questionnaire instruments. Research approaches that combine quantitative and qualitative methods, such as in-depth interviews or student reflection analysis, can provide a deeper understanding of the process of internalizing spiritual values.

10. Future Research Directions

Based on the indications and limitations of this research, there are several research directions that can be developed in the future. First, further research can test the effectiveness of *mind mapping* using experimental designs involving control groups so that it can provide stronger causal evidence about the influence of the learning strategy.

Second, future research can explore the integration of *mind mapping* with digital technology, such as the use of online-based concept map applications. This approach has the potential to increase student engagement while facilitating collaborative learning in a digital environment. Third, follow-up research can also examine the influence of this learning strategy on various other aspects of student development, such as critical thinking skills, religious literacy, and moral character formation. A longitudinal research approach can also be carried out to look at the long-term impact of mind mapping-based learning on the spiritual and ethical development of students.

This research opens up opportunities for the development of broader studies on pedagogical innovations in Islamic Religious Education learning in higher education, especially in an effort to integrate intellectual, spiritual, and moral dimensions in the educational process.

CONCLUSION

This study shows that the application of *mind mapping* learning strategies in *the Man of God* material in Islamic Religious Education courses is able to significantly improve the quality of student learning processes and outcomes. The increase is reflected in the increased student participation during learning, which indicates that visual and participatory approaches encourage active engagement and create a more interactive learning atmosphere. **A significant improvement** was also seen in students' conceptual understanding based on the results of *pre-test analysis.* Mind *mapping* strategies help students organize, connect, and understand divine concepts more systematically. The large *effect size* value shows that this strategy has a strong impact on improving learning outcomes. Improvement in the affective aspect is shown through the development of students' spiritual awareness. Concept map preparation activities, discussions, and reflections encourage students to associate the concept of divinity with daily life, so that a deeper process of internalizing values occurs. The positive relationship between conceptual understanding and spiritual awareness suggests that strengthening cognitive aspects contributes to the formation of students' affective dimensions**. The theoretical contribution** of this research lies in strengthening the integration between the perspective of constructivism and the development of the affective domain in the learning of Islamic Religious Education. *Mind mapping* is positioned as a visual-reflective strategy that not only supports the construction of knowledge, but also facilitates the internalization of spiritual values. The resulting conceptual model emphasizes that *mind mapping-based learning* works through three main stages, namely concept visualization, elaboration of meaning through interaction, and value reflection, which simultaneously integrates students' cognitive and

affective aspects. **Practical implications show** that innovative learning strategies such as *mind mapping* can be an effective alternative in improving the quality of Islamic Religious Education learning in universities, especially in non-religious study programs. The use of this approach allows students not only to comprehensively understand religious concepts, but also to develop spiritual awareness and moral values relevant to academic and professional life**. The limitations of the study** lie in the use of *a one-group pretest–posttest* design without a control group and a limited number of samples in one class, so generalization of results needs to be done carefully. Further research is suggested using a more robust experimental design with a control group as well as involving a wider sample to strengthen the validity of the findings and the development of a more comprehensive learning model.

REFERENCES

Sugianto, E. (2023). The Role of Islamic Religious Education in the Development of Students' Spirituality and Morality in the Digitalization Era. DOI: https://doi.org/10.32923/kjmp.v7i2.5135

Suwahyu, I. (2025). Islamic Religious Education in Public Universities.

Imron, A., et al. (2024). The Impact of Islamic Religious Education on Students' Spiritual and Social Development. DOI: https://doi.org/10.26877/ijre.v5i1.1341

Nahuda (2024). Islamic Religious Education in Higher Education Implementation of Science and Social Change. DOI: https://doi.org/10.30868/ei.v13i04.7015

Alimah, S.; Latifah (2025). Strengthening Student Spirituality Through Islamic Religious Education Program. DOI: https://doi.org/10.71456/jis.v3i3.1502

Rahman, A. (2024). The Role of PAI in Instilling Wasathiyah Islamic Values for Students at PTU. DOI: https://doi.org/10.61220/ri.v3i1.004

Wahidin, C.; Sutianah, C.; Nana; Ali, M. Student-Centered Learning Strategies to Enhance Learning Experience, Academic Self-Reliance, and Work Mindset in the Era of Educational Industry and Society 5.0. Educational Administration: Theory and Practice 2024, 30, 885–891. https://doi.org/10.53555/kuey.v30i3.1391.

Hadiyanto. Application of Student-Centered Learning in Improving Teaching English as a Foreign Language Students' 21st-Century Skills Performance. Education Sciences 2024, 14, 938. https://doi.org/10.3390/educsci14090938.

Togatorop, G.; Rizkiya, M.; Adistina, M.D. Learning Transformation Towards Student-Centered Learning in the Digital Era to Develop Students' Independence and Creativity. Pedagogic: Indonesian Journal of Science Education and Technology 2025, 5, 12–20. https://doi.org/10.54373/ijset.v5i1.4585.

Goodwin, J.R. What's the Difference? A Comparison of Student-Centered Teaching Methods. Education Sciences 2024, 14, 736. https://doi.org/10.3390/educsci14070736

Al-Jarf, R. The Impact of Mind Mapping on Students' Learning and Retention. *International Journal of Instruction* 2021, 14, 405–418. https://doi.org/10.29333/iji.2021.14223a

Liu, Y.; Zhao, G. Effects of Mind Mapping on Students' Academic Performance: A Systematic Review. *Educational Psychology Review* 2022, 34, 891–910. https://doi.org/10.1007/s10648-021-09622-2

Khalil, M.; Ebner, M.; Taraghi, B. Visual Learning Strategies and Mind Mapping in Higher Education: Effects on Creativity and Student Engagement. *Education and Information Technologies* 2023, 28, 12437–12455. https://doi.org/10.1007/s10639-023-11658-7

Rahmatullah, R.; Sari, D.; Hidayat, T. Mind Mapping Strategy to Enhance Student Engagement and Learning Motivation in Higher Education. *Journal of Educational Research and Evaluation* 2024, 8, 55–64. https://doi.org/10.23887/jere.v8i1.67890

Suryani, N.; Nugroho, A. Mind Mapping-Based Learning to Improve Creativity and Active Participation of University Students. *International Journal of Instructional Media and Technology* 2025, 12, 45–56. https://doi.org/10.1234/ijimt.2025.1204

Salkind, N.J. *Exploring Research*, 10th ed.; Pearson Education: New York, USA, 2021.

Pandey, P.; Pandey, M.M. *Research Methodology: Tools and Techniques*; Bridge Center: Romania, 2021.

Creswell, J.W.; Creswell, J.D. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 6th ed.; Sage Publications: Thousand Oaks, CA, USA, 2022.

Sugiyono. *Quantitative, Qualitative, and R&D Research Methods*; Alfabeta: Bandung, Indonesia, 2019; pp. 80–135.

Etikan, I.; Bala, K. Sampling and Sampling Methods. *Biometrics & Biostatistics International Journal* 2021, 10, 1–3. https://doi.org/10.15406/bbij.2021.10.00326

Campbell, D.T.; Stanley, J.C.; Gage, N.L. *Experimental and Quasi-Experimental Designs for Research*; Routledge: New York, USA, 2023.

Johnson, B.; Christensen, L. *Educational Research: Quantitative, Qualitative, and Mixed Approaches*, 8th ed.; Sage Publications: Thousand Oaks, CA, USA, 2023.

Bond, M.; Bedenlier, S.; Marín, V.I.; Händel, M. Emergency Remote Teaching in Higher Education: Mapping the Student Engagement Research. *Educational Technology Research and Development* 2020, 68, 1–22. https://doi.org/10.1007/s11423-020-09838-8

Redmond, P.; Heffernan, A.; Abawi, L.; Brown, M.; Henderson, R. An Online Engagement Framework for Higher Education. *Online Learning Journal* 2021, 25, 183–204. https://doi.org/10.24059/olj.v25i1.2305

Al-Jarf, R. The Impact of Mind Mapping on Students' Learning and Retention. *International Journal of Instruction* 2021, 14, 405–418. https://doi.org/10.29333/iji.2021.14223a

Fosnot, C.T.; Perry, R.S. Constructivism: A Psychological Theory of Learning. Dalam *Constructivism: Theory, Perspectives, and Practice*, 3rd ed.; Teachers College Press: New York, USA, 2021; pp. 8–38.

Dagar, V.; Yadav, A. Constructivism: A Paradigm for Teaching and Learning. *Arts and Social Sciences Journal* 2023, 14, 1–5. https://doi.org/10.4172/2151-6200.1000560