

THE EFFECT OF USING A CANVA-BASED MIND MAPPING MODEL ON STUDENTS' ACTIVE PARTICIPATION IN ISLAMIC EDUCATION

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Abstract

This study analyzes the relationship between Canva-based mind mapping and students' active participation in Islamic Religious Education (PAI). A quantitative descriptive-correlational approach with a one-shot cross-sectional design was employed. The sample consisted of 63 ninth-grade students at SMP Muhammadiyah 1 Surabaya selected purposively. Data were collected through a Canva-based mind mapping questionnaire, an active participation questionnaire, structured classroom observations, and documentation of students' mind maps, then analyzed using Pearson correlation, Spearman correlation, and simple linear regression. The findings show a strong positive relationship between Canva-based mind mapping and active participation ($r=0.817$; $p<0.001$). The regression model explains 66.8% of the variance in active participation ($R^2=0.668$), with a regression coefficient of 2.348. The strongest associations were found in the emotional ($R^2=0.616$) and cognitive ($R^2=0.593$) dimensions, followed by verbal and behavioral participation. These findings indicate that integrating visual concept mapping with digital tools is strongly associated with multidimensional student engagement, although the correlational design does not support strong causal inference.

Keywords: Canva; Mind Mapping; Active Participation; Islamic Religious Education; Digital Learning

Abstrak

Penelitian ini bertujuan menganalisis hubungan penerapan mind mapping berbasis Canva dengan partisipasi aktif siswa dalam pembelajaran Pendidikan Agama Islam (PAI). Penelitian menggunakan pendekatan kuantitatif deskriptif-korelasional dengan desain one-shot cross-sectional. Sampel terdiri atas 63 siswa kelas IX SMP Muhammadiyah 1 Surabaya yang dipilih secara purposif. Data dikumpulkan melalui angket penggunaan Canva berbasis mind mapping, angket partisipasi aktif, observasi terstruktur, dan dokumentasi produk mind mapping, kemudian dianalisis menggunakan korelasi Pearson, korelasi Spearman, dan regresi linear sederhana. Hasil penelitian menunjukkan hubungan positif yang kuat antara penggunaan Canva berbasis mind mapping dan partisipasi aktif siswa ($r=0,817$; $p<0,001$). Model regresi menjelaskan 66,8% variasi partisipasi aktif ($R^2=0,668$), dengan koefisien regresi sebesar 2,348. Kontribusi terbesar ditemukan pada dimensi emosional ($R^2=0,616$) dan kognitif ($R^2=0,593$), diikuti dimensi verbal dan perilaku. Temuan menunjukkan bahwa integrasi visualisasi konsep dan teknologi digital berkaitan kuat dengan keterlibatan multidimensional siswa dalam konteks pembelajaran agama berbasis digital di sekolah, meskipun desain korelasional tidak memungkinkan inferensi kausal yang kuat.

Kata Kunci: Canva; Mind Mapping; Partisipasi Aktif; Pendidikan Agama Islam; Pembelajaran Digital



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INTRODUCTION

The rapid advancement of digital technology has profoundly transformed contemporary educational practices, shifting instructional paradigms toward learner-centered, interactive, and technology-mediated learning environments. In Islamic education, digital innovation is increasingly viewed not merely as a supportive tool, but as a strategic medium for fostering meaningful learning experiences, student engagement, and value internalization aligned with Islamic principles.¹ Nevertheless, the challenge remains in ensuring that digital integration in Islamic education does not merely enhance content delivery, but also actively engages learners in higher-order cognitive and participatory processes.²

Recent empirical studies demonstrate that digital learning media significantly contribute to improving learning outcomes, motivation, and accessibility across educational contexts. The use of Canva-based instructional media, for instance, has been shown to enhance students' learning achievement and motivation in Islamic education subjects.³ Canva's visual and interactive affordances allow abstract religious concepts to be presented in more concrete, engaging, and student-friendly formats.⁴ However, existing research predominantly focuses on learning outcomes and motivation, with limited attention to student active participation as a core indicator of instructional effectiveness.

Parallel to advancements in digital media, cognitive learning models such as mind mapping have gained renewed scholarly attention due to their effectiveness in structuring knowledge, promoting conceptual understanding, and encouraging active learner involvement. Mind mapping

¹ M. C. Hidayat and S. Arifin, "Integration of Science and Technology with Islamic Values: An Empowering Education Model," in *Proceedings of the 1st Borobudur International Symposium on Humanities, Economics and Social Sciences (BIS-HESS 2019)* (Atlantis Press, 2020), <https://doi.org/10.2991/assehr.k.200529.202>; M. Huda et al., "Opportunities and Challenges of Islamic Education in the Digital Era," *Ar-Fachruddin: Journal of Islamic Education* 1, no. 1 (2024): 1–11, <https://doi.org/10.7401/43ctqr44>.

² G. A. N. Zakaria and S. Mahalle, "The Urgency of Educational Technology in Islamic Education," *Ar-Fachruddin: Journal of Islamic Education* 1, no. 1 (2024): 12–19, <https://doi.org/10.7401/s5bc5h23>.

³ S. Mutaqorribain et al., "The Effect of Teachers' Motivation on Student Learning Activities in Islamic Education Lessons," *Nazhruna: Jurnal Pendidikan Islam* 5, no. 3 (2022): 887–907, <https://doi.org/10.31538/nzh.v5i3.2101>; Achmad Syarifudin, "Pengaruh Media Pembelajaran Berbasis Aplikasi Canva Terhadap Hasil Belajar Pendidikan Agama Islam," *Jurnal Ilmiah Edukatif* 9, no. 2 (2023): 78–95, <https://doi.org/10.37567/jie.v9i2.2474>; F. E. N. Ardani et al., "Canva Application in Increasing Student Motivation in Islamic Education Learning at SMAIT Al-Uswah Surabaya," *International Journal of Social Science and Human Research* 8, no. 1 (2025), <https://doi.org/10.47191/ijsshr/v8-i1-69>; R. A. Wulandari et al., "Video-Based Interactive Media in Fiqih Learning in Zakat Chapter for Grade IX Students Using Canva Application," *Al Qalam: Jurnal Ilmiah Keagamaan Dan Kemasyarakatan* 19, no. 3 (2025): 1656–70, <https://doi.org/10.35931/aq.v19i3.4299>.

⁴ C. Miranda and L. Enciso, "Use of Canva as a Communication Tool in the Educational Process through Infographics," in *Proceedings of the Iberian Conference on Information Systems and Technologies (CISTI)* (IEEE, 2023), <https://doi.org/10.23919/CISTI58278.2023.10211654>; M. Iqbal et al., "Development Learning to Recognize Hijaiyah Letters in Reading and Writing the Qur'an Based on Canva Application to Improve Learning Motivation," *Al Qalam: Jurnal Ilmiah Keagamaan Dan Kemasyarakatan* 19, no. 3 (2025): 1579–93, <https://doi.org/10.35931/aq.v19i3.4425>.

facilitates the organization of ideas through visual-spatial representation, thereby supporting meaningful learning and cognitive engagement.⁵ In the context of Islamic education, mind mapping has been empirically validated as an effective instructional strategy for improving conceptual comprehension and learning organization.⁶ Furthermore, contemporary studies indicate that mind mapping integrated with collaborative and problem-based approaches positively influences students' verbal participation and academic performance.⁷

State of the art research increasingly highlights the pedagogical potential of integrating innovative instructional models with digital technologies to enhance student engagement. Studies on gamification, problem-based learning, and interactive digital media report significant improvements in learner participation and learning quality in Islamic education contexts.⁸ Despite these advances, empirical investigations that explicitly combine mind mapping as a cognitive learning model with Canva as a digital platform remain scarce. Most Canva-based studies treat the application as a presentation or visualization tool rather than as an integral component of a structured cognitive learning strategy.⁹

Moreover, contemporary educational research emphasizes that active participation—encompassing behavioral, cognitive, and emotional dimensions—plays a crucial role in mediating learning effectiveness and academic achievement.¹⁰ Empirical evidence suggests a reciprocal

⁵ Y. Pillay et al., "Introducing Mind Mapping as a Creative Counseling Modality," *Journal of Creativity in Mental Health*, ahead of print, 2020, <https://doi.org/10.1080/15401383.2020.1746721>; X. Liu et al., "Modeling on the Process of Cooperative Discussional Problem Solving Based on Extended Mind Map," in *Proceedings of the 15th International Conference on Computer Supported Cooperative Work in Design (CSCWD)* (IEEE, 2011), <https://doi.org/10.1109/CSCWD.2011.5960084>.

⁶ A. Asrori et al., "Implementasi Metode Mind Mapping Berbasis Software GitMind Pada Mata Pelajaran Pendidikan Agama Islam Di Sekolah Menengah Kejuruan Negeri 8 Surabaya," *Al-Ulum: Jurnal Pemikiran Dan Penelitian Keislaman* 10, no. 3 (2023): 267–78, <https://doi.org/10.31102/alulum.10.3.2023.267-278>.

⁷ M. Sedláček et al., "If They Talk More during Lessons, Will They Achieve Better? Unlocking the Reciprocal Relationship between Student Verbal Participation and Achievement," *Studia Paedagogica*, ahead of print, 2024, <https://doi.org/10.5817/SP2024-3-2>.

⁸ A. Alea et al., "The Impact of Minecraft-Based Gamification on Islamic Education Learning Outcomes: Evidence from a Santichon Islamic School (SIS) Bangkok Thailand," *Ar-Fachruddin: Journal of Islamic Education* 2, no. 1 (2025): 1–9, <https://doi.org/10.7401/2q4s5135>; A. Amirudin et al., "Problem-Based Learning as a Pedagogical Innovation for Transforming Higher Education Students' Islamic Religious Comprehension," *Educational Proses* 18 (2025), <https://doi.org/10.22521/edupij.2025.18.412>; A. Pujosakti and A. Asrori, "Development of Android Game-Based Interactive Learning Media to Enhance Student Participation and Learning Outcomes on Asmaul Husna Material at MI Muhammadiyah 1 Jombang," *Jurnal Staika: Jurnal Penelitian Dan Pendidikan* 9, no. 1 (2026): 79–86, <https://doi.org/10.62750/nj5sxxg78>.

⁹ Syarifudin, "Pengaruh Media Pembelajaran Berbasis Aplikasi Canva Terhadap Hasil Belajar Pendidikan Agama Islam"; Ardani et al., "Canva Application in Increasing Student Motivation in Islamic Education Learning at SMAIT Al-Uswah Surabaya."

¹⁰ R. Girdzijauskienė et al., "Strengthening Student Engagement in Learning through Use of Digital Tools," *Acta Paedagogica Vilnensia* 49 (2022), <https://doi.org/10.15388/ACTPAED.2022.49.8>; S. E. Tan and I. Jung, "Unveiling the Dynamics and Impact of Emotional Presence in Collaborative Learning," *International Journal of Educational Technology in Higher Education*, ahead of print, 2024, <https://doi.org/10.1186/s41239-024-00477-y>.

relationship between students' classroom participation and learning outcomes, underscoring the need for instructional designs that deliberately foster active engagement rather than passive content consumption.¹¹ Consequently, evaluating the effectiveness of digital learning in Islamic education requires a shift beyond outcome-oriented metrics toward participation-centered indicators.

Against this backdrop, a clear research gap emerges: while studies have independently examined the pedagogical value of Canva-based media and mind mapping strategies, there is a lack of empirical research investigating their integrated application and its impact on students' active participation in Islamic education learning. Addressing this gap is particularly important given the growing demand for instructional models that align digital innovation with student-centered pedagogies in faith-based education.

Therefore, this study aims to examine the effect of implementing a Canva-based mind mapping learning model on students' active participation in Islamic Religious Education. By focusing on participation as a key learning outcome, this research contributes to the theoretical discourse on digital–cognitive learning integration and offers practical insights for Islamic education teachers seeking to design participatory, engaging, and pedagogically sound digital learning environments.

RESEARCH METHODS

This study adopted a quantitative descriptive–correlational design to examine the relationship and predictive effect of Canva-based mind mapping on students' active participation in Islamic education (PAI). A correlational approach was selected because it enables researchers to identify naturally occurring associations among educational variables without experimental manipulation.¹² The research employed a one-shot cross-sectional design, in which measurements of the independent and dependent variables were collected simultaneously at a single point in time during the instructional process, without the use of control groups or repeated measures. This design is widely used in educational research to explore relationships and predictive tendencies in authentic classroom settings.

The study was conducted at SMP Muhammadiyah 1 Surabaya during the 2025/2026 academic year and involved ninth-grade students. The population consisted of all Grade IX students from four parallel classes (9A–9D), totaling 122 students. The sample comprised 63 students drawn from two classes (9A and 9B) using purposive sampling, with selection criteria including equal access to digital technology, instruction by the same PAI teacher, and comparable learning

¹¹ Sedláček et al., "If They Talk More during Lessons, Will They Achieve Better? Unlocking the Reciprocal Relationship between Student Verbal Participation and Achievement."

¹² L. Cohen et al., *Research Methods in Education*, 8th ed. (Routledge, 2018), <https://doi.org/10.4324/9781315456539>.

schedules. Such sampling considerations were applied to enhance internal consistency and minimize contextual bias.¹³

The independent variable was students' use of Canva-based mind mapping, conceptualized as a visual learning strategy that facilitates meaningful learning through hierarchical structuring, visual symbols, and creative representation of concepts.¹⁴ This variable was measured based on indicators reflecting the stages of mind mapping implementation and the extent of students' engagement with Canva features, including templates, icons, color schemes, and collaborative tools. The dependent variable was students' active participation in PAI learning, operationalized through four dimensions: cognitive, verbal, emotional, and behavioral participation. This multidimensional framework aligns with student engagement theory, which conceptualizes participation as a combination of mental effort, observable interaction, affective involvement, and task-oriented behavior.¹⁵

Data were collected using three complementary instruments. First, a Canva-based mind mapping questionnaire consisting of 15 Likert-scale items assessed the frequency and quality of students' use of Canva in constructing mind maps. Second, an active participation questionnaire comprising 40 items (10 items per dimension) measured students' engagement across cognitive, verbal, emotional, and behavioral domains. The construction of this instrument was grounded in established engagement and motivation theories (Fredricks et al., 2004; Schunk et al., 2014). Third, structured classroom observations and documentation of students' mind mapping products were employed as supporting data sources to triangulate self-reported responses and enhance the credibility of the findings.¹⁶ All instruments were administered concurrently during regular classroom sessions, with student participation being voluntary and supported by institutional approval.

Prior to the main data collection, the instruments underwent a rigorous validation process. Content validity was established through expert judgment, while empirical validity was examined via a pilot study involving 30 students with characteristics similar to the research sample but excluded from the main study. Item-total correlation analysis was conducted, with items showing correlation coefficients below 0.30 considered for revision or removal, consistent with psychometric standards in educational research.¹⁷ Instrument reliability was assessed using

¹³ Cohen et al., *Research Methods in Education*.

¹⁴ Cohen et al., *Research Methods in Education*; T. Buzan and B. Buzan, *The Mind Map Book: How to Use Radiant Thinking to Maximize Your Brain's Untapped Potential* (BBC Active, 2006).

¹⁵ Cohen et al., *Research Methods in Education*; J. A. Fredricks et al., "School Engagement: Potential of the Concept, State of the Evidence," *Review of Educational Research* 74, no. 1 (2004): 59–109, <https://doi.org/10.3102/00346543074001059>.

¹⁶ Cohen et al., *Research Methods in Education*.

¹⁷ A. Field, *Discovering Statistics Using IBM SPSS Statistics*, 5th ed. (SAGE Publications, 2018).

Cronbach's alpha, and all scales achieved coefficients exceeding 0.70, indicating acceptable internal consistency.¹⁸

Data analysis involved both descriptive and inferential statistics. Descriptive analysis was used to summarize the levels of Canva-based mind mapping usage and students' active participation through means, standard deviations, frequencies, and percentages. Inferential analysis employed Pearson product-moment correlation and simple linear regression to examine the strength and predictive effect of Canva-based mind mapping on active participation. Prior to inferential testing, assumptions of normality were assessed using the Shapiro-Wilk test, and linearity was examined through scatter plot inspection.¹⁹ When normality assumptions were not met, Spearman's rank correlation was applied as a non-parametric alternative. The coefficient of determination (R^2) was calculated to indicate the proportion of variance in students' active participation explained by Canva-based mind mapping usage. Statistical significance was determined at an alpha level of 0.05, and all analyses were conducted using SPSS to ensure accuracy and analytical rigor.

RESULTS AND DISCUSSION

his study involved 63 ninth-grade students, and all data were declared valid and fully utilized in the analysis. The independent variable was the use of a Canva-based mind mapping model, while the dependent variable was students' active participation in Islamic Education (PAI) learning, encompassing cognitive, verbal, emotional, and behavioral dimensions.

Table 1. Case Processing Summary

Variable	N	Percentage
Valid data	63	100%
Excluded data	0	0%
Total	63	100%

This indicates that all 63 respondents' data were valid and fully included (100%) in the analysis. No data were excluded, ensuring that the statistical results accurately represent the sample without distortion from missing or incomplete data. This demonstrates that the data quality is very good and suitable for further analysis.

¹⁸ Cohen et al., *Research Methods in Education*; Field, *Discovering Statistics Using IBM SPSS Statistics*.

¹⁹ Cohen et al., *Research Methods in Education*; Field, *Discovering Statistics Using IBM SPSS Statistics*.

Linearity Assumption Test

Table 2. Linearity Test of Canva-Based Mind Mapping on Students' Active Participation

Component	Sig.
Linearity	< 0.001
Deviation from Linearity	0.399

This table presents the results of the linearity test examining the relationship between the use of Canva-based mind mapping and students' active participation. The significance value for the Linearity component (< 0.001) indicates a statistically significant relationship between the two variables. Meanwhile, the Deviation from Linearity value of 0.399 (> 0.05) indicates no deviation from a linear relationship. Therefore, it can be concluded that the relationship between Canva usage and students' active participation is linear and meets the assumptions for linear regression analysis.

Relationship Between Canva Usage and Active Participation

Table 3. Correlation Between Canva Usage and Active Participation

Correlation Type	Coefficient	Sig.	N
Pearson	0.817	<0.001	63
Spearman	0.754	<0.001	63

The Pearson correlation result shows $r = 0.817$ with $p < 0.001$, indicating a very strong and significant positive relationship. Likewise, the Spearman correlation yields a consistent result with $\rho = 0.754$ ($p < 0.001$). The consistency between the two correlation tests strengthens the conclusion that the higher the level of Canva usage, the higher students' active participation in PAI learning.

Simple Regression Analysis

Table 4. Regression Model Summary: Canva on Active Participation

R	R ²	Adjusted R ²	Std. Error
0.817	0.668	0.662	13.332

The correlation coefficient ($R = 0.817$) indicates a strong relationship between the independent and dependent variables. R Square = 0.668 shows that 66.8% of the variance in students' active participation can be explained by the use of the Canva-based mind mapping model, while the remaining 33.2% is influenced by factors outside the study model. The proximity of Adjusted R Square to R Square indicates that the regression model has good stability.

Table 5. ANOVA: Regression of Canva on Active Participation

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	21786.397	1	21786.397	122.571	<0.001
Residual	10842.460	61	177.745		
Total	32628.857	62			

$F = 122.571$ with $p < 0.001$ indicates that the regression model is statistically significant. Thus, it can be concluded that the Canva-based mind mapping model has a significant simultaneous effect on students' active participation in PAI learning.

Table 6. Regression Coefficients: Canva on Active Participation

Variable	B	Std. Error	Beta	t	Sig.
Constant	15.657	12.485	–	1.254	0.215
Canva_Total	2.348	0.212	0.817	11.071	<0.001

The Canva_Total variable has a regression coefficient of $B = 2.348$ with $p < 0.001$, indicating a positive and significant effect on students' active participation. The constant is not statistically significant. The resulting regression equation shows that a one-unit increase in Canva usage increases students' active participation by 2.348 units.

Effect of Canva on Each Dimension of Active Participation

Table 7. Summary of Canva's Effect on Active Participation Dimensions

Participation Dimension	R^2	Sig.	Effect Category
Cognitive	0.593	<0.001	Strong
Verbal	0.507	<0.001	Moderate–Strong
Emotional	0.616	<0.001	Strong
Behavioral	0.484	<0.001	Moderate

The analysis shows that all dimensions are significantly influenced ($p < 0.001$). The largest effects are observed in the emotional ($R^2 = 0.616$) and cognitive ($R^2 = 0.593$) dimensions, followed by verbal ($R^2 = 0.507$) and behavioral ($R^2 = 0.484$). These findings indicate that Canva usage not only enhances observable participation behaviors but also strengthens internal aspects such as motivation, interest, and cognitive engagement.

Table 8. Measures of Association

Measure	Value
R	0.817
R^2	0.668
Eta	0.888
Eta Squared	0.788

An Eta Squared value of 0.788 indicates a very large effect size of Canva-based mind mapping on students' active participation. This confirms that Canva is not merely a supportive medium but makes a substantive contribution to improving the quality of student participation.

The findings demonstrate that the use of Canva-based mind mapping has a positive, significant, and strong effect on students' active participation in PAI learning. The integration of concept visualization through mind mapping and digital technology support via Canva promotes engagement across cognitive, verbal, emotional, and behavioral dimensions. The emotional and cognitive dimensions show the greatest contribution, suggesting that interactive visual design can enhance intrinsic motivation and conceptual understanding of religious content. These results reinforce student-centered learning theory and support previous research highlighting the effectiveness of visual digital media in PAI education.

Discussion

The findings of this study indicate that the use of Canva-based mind mapping significantly and positively affects students' active participation in Islamic Education (PAI). The analysis showed a strong correlation ($r = 0.817$, $p < 0.001$) and a large effect size ($\eta^2 = 0.788$), suggesting that the integration of visual concept mapping and digital technology can substantially enhance student engagement across cognitive, verbal, emotional, and behavioral dimensions. These results are consistent with previous studies that have highlighted the effectiveness of digital learning tools in fostering active learning and motivation in Islamic education.²⁰

The cognitive and emotional dimensions exhibited the largest effects ($R^2 = 0.593$ and 0.616 , respectively), indicating that interactive visualizations can enhance students' conceptual understanding and intrinsic motivation. This aligns with the student-centered learning paradigm, which emphasizes active engagement, meaningful learning experiences, and internalization of knowledge.²¹ In particular, the use of Canva allows students to organize information visually, facilitating deeper comprehension of religious concepts and encouraging emotional investment in learning activities.²²

²⁰ Syarifudin, "Pengaruh Media Pembelajaran Berbasis Aplikasi Canva Terhadap Hasil Belajar Pendidikan Agama Islam"; Ardani et al., "Canva Application in Increasing Student Motivation in Islamic Education Learning at SMAIT Al-Uswah Surabaya."

²¹ Fredricks et al., "School Engagement: Potential of the Concept, State of the Evidence"; D. H. Schunk et al., *Motivation in Education: Theory, Research, and Applications*, 4th ed. (Pearson Education, 2014); A. Indrawan et al., "Implementasi Pembelajaran Konstruktivisme Dengan Strategi Generatif Learning Terhadap Peningkatan Motivasi Belajar Siswa Pada Mata Pelajaran Pendidikan Agama Islam Di SMA Muhammadiyah 09 Surabaya," *Hikmah: Jurnal Pendidikan Islam* 12, no. 1 (2023): 240–56, <https://doi.org/10.55403/HIKMAH.V12I1.464>.

²² Buzan and Buzan, *The Mind Map Book: How to Use Radiant Thinking to Maximize Your Brain's Untapped Potential*; Pillay et al., "Introducing Mind Mapping as a Creative Counseling Modality."

Furthermore, these findings corroborate earlier research demonstrating that the application of digital media in Islamic education can foster engagement and improve learning outcomes.²³ Similar to the study by Alee et al.,²⁴ which showed that gamification strategies in Islamic schools enhanced participation, the current study confirms that technology-supported learning interventions, such as Canva-based mind mapping, can stimulate active involvement, not only behaviorally but also cognitively and emotionally.

The regression analysis revealed that 66.8% of the variance in active participation could be explained by Canva usage, while the remaining 33.2% was influenced by external factors. This suggests that although digital mind mapping is a robust pedagogical tool, other variables, such as teacher facilitation, classroom culture, and peer interactions, also contribute to students' engagement.²⁵ Integrating Canva with collaborative learning strategies, such as problem-based learning or cooperative discussions, may further optimize student participation and comprehension.²⁶

In addition, the findings highlight the potential of Canva to support the development of students' moderate Islamic character and moral reasoning, as visual mind mapping encourages reflection and meaningful connection of religious concepts to daily life.²⁷ This is particularly relevant in the context of PAI learning, where internalization of values and critical engagement with religious texts are essential learning outcomes.²⁸

Overall, this study reinforces the role of digital tools, specifically Canva-based mind mapping, as an effective pedagogical strategy to enhance active participation in PAI. By providing

²³ A. Hamid et al., "Implementation of Active Learning Methods in Islamic Elementary School (Implementasi Metode Active Learning Di Madrasah Ibtidaiyah)," *Al-Mudarris: Journal of Education* 5, no. 1 (2022): 54–71, <https://doi.org/10.32478/al-mudarris.v5i1.932>; Syarifudin, "Pengaruh Media Pembelajaran Berbasis Aplikasi Canva Terhadap Hasil Belajar Pendidikan Agama Islam"; Wulandari et al., "Video-Based Interactive Media in Fiqih Learning in Zakat Chapter for Grade IX Students Using Canva Application"; Ardani et al., "Canva Application in Increasing Student Motivation in Islamic Education Learning at SMAIT Al-Uswah Surabaya."

²⁴ Alee et al., "The Impact of Minecraft-Based Gamification on Islamic Education Learning Outcomes: Evidence from a Santichon Islamic School (SIS) Bangkok Thailand."

²⁵ Asrori et al., "Implementasi Metode Mind Mapping Berbasis Software GitMind Pada Mata Pelajaran Pendidikan Agama Islam Di Sekolah Menengah Kejuruan Negeri 8 Surabaya"; Girdzijauskienė et al., "Strengthening Student Engagement in Learning through Use of Digital Tools"; Tan and Jung, "Unveiling the Dynamics and Impact of Emotional Presence in Collaborative Learning."

²⁶ Amirudin et al., "Problem-Based Learning as a Pedagogical Innovation for Transforming Higher Education Students' Islamic Religious Comprehension"; Liu et al., "Modeling on the Process of Cooperative Discussion Problem Solving Based on Extended Mind Map."

²⁷ M. M. Anas et al., "Shaping Students' Moderate Islamic Character at Madrasah," *Jurnal Pendidikan* 10, no. 2 (2024), <https://doi.org/10.15575/jpi.v10i2.34029>; A. Ferdian et al., "Philosophy, Education, and Religious Values in the Pegon Jaranan Dance Culture," *Nazhruna: Jurnal Pendidikan Islam* 5, no. 2 (2022): 852–63, <https://doi.org/10.31538/nzh.v5i2.2064>.

²⁸ A. Asrori, *Psikologi Pendidikan: Pendekatan Multidisipliner* (Pena Persada, 2020), <http://repository.um-surabaya.ac.id/id/eprint/4461>; M. P. I. Asrori, *Inovasi Belajar Dan Pembelajaran PAI (Teori & Aplikatif)* (UMSurabaya Press, 2019), <http://repository.um-surabaya.ac.id/id/eprint/4629>.

a structured yet flexible platform for visualizing religious knowledge, Canva supports cognitive processing, verbal articulation, emotional involvement, and behavioral engagement. These findings contribute to the growing body of literature on digital learning innovations in Islamic education and provide practical implications for teachers aiming to foster holistic and student-centered learning environments.²⁹

CONCLUSION

This study demonstrates a strong and statistically significant positive relationship between the use of Canva-based mind mapping and students' active participation in Islamic Religious Education at SMP Muhammadiyah 1 Surabaya. The Pearson correlation coefficient of 0.817 with a significance level below 0.001 indicates that higher levels of engagement with Canva-based mind mapping are associated with higher levels of student participation. The consistency of the Spearman correlation result further supports the robustness of this association within the sample.

The simple linear regression model indicates that Canva-based mind mapping accounts for 66.8% of the variance in students' active participation, with an R^2 value of 0.668. The regression coefficient of 2.348 indicates that increases in the measured use of Canva-based mind mapping are positively associated with increases in active participation scores. These findings position digital mind mapping as a potentially important instructional resource for encouraging student involvement in PAI learning.

The relationship is evident across cognitive, verbal, emotional, and behavioral dimensions of participation. The strongest explanatory proportions were found for emotional participation ($R^2=0.616$) and cognitive participation ($R^2=0.593$), followed by verbal participation ($R^2=0.507$) and behavioral participation ($R^2=0.484$). This pattern suggests that visual organization, creativity, and digital interaction may be particularly relevant to students' interest, motivation, concentration, and cognitive engagement with religious learning materials.

From a pedagogical perspective, Canva-based mind mapping provides students with opportunities to organize concepts, connect ideas, present information visually, and participate more actively in the learning process. Its educational value therefore lies not simply in the attractiveness of digital presentation but in the integration of a cognitive mapping strategy with a

²⁹ E. Dritsas and M. Trigka, "Methodological and Technological Advancements in E-Learning," *Information* 16, no. 1 (2025), <https://doi.org/10.3390/info16010056>; C. Gubbins et al., "Digital Learning: A Bright New Dawn for Learning and Development," in *Palgrave Studies in Digital Business and Enabling Technologies* (Palgrave Macmillan, 2023), https://doi.org/10.1007/978-3-031-31494-0_9; Y. Wu et al., "Advancing Accessibility, Engagement, and Innovation through Digital Education Technologies: A Comprehensive Analysis," in *Proceedings of the 29th IEEE International Conference on Intelligent Engineering Systems (INES 2025)* (IEEE, 2025), <https://doi.org/10.1109/INES67149.2025.11078201>.

flexible visual platform. Such integration can support a more participatory and student-centered environment in PAI instruction.

Overall, this study contributes empirical evidence regarding the association between digital–cognitive learning integration and multidimensional student participation. Nevertheless, because the research employed a cross-sectional correlational design, the findings should not be interpreted as establishing a causal effect of Canva-based mind mapping. Future research should employ experimental or quasi-experimental designs, larger and more diverse samples, and longitudinal measurement to determine whether the observed relationship persists over time and to isolate the contribution of teacher facilitation, peer collaboration, classroom culture, and students' prior digital competence.

Research Novelty

The novelty of this study lies in integrating mind mapping as a cognitive learning strategy with Canva as a digital visualization platform while positioning active participation, not merely achievement or motivation, as the primary learning outcome. Previous studies have commonly examined Canva as a presentation medium or assessed its relationship with academic achievement and learning motivation. This study extends that discussion by examining participation as a multidimensional construct encompassing cognitive, verbal, emotional, and behavioral engagement in Islamic Religious Education.

A further contribution is the identification of different patterns across participation dimensions. The strongest statistical relationships emerged in emotional and cognitive participation, followed by verbal and behavioral dimensions. This finding provides a more differentiated understanding of digital learning engagement by suggesting that Canva-based mind mapping may be particularly relevant to students' interest, motivation, concentration, and conceptual processing rather than only to observable classroom behavior.

The study also contributes to Islamic education research by situating digital innovation within a structured cognitive learning framework. Canva is not treated merely as a technological accessory but as a platform through which students organize, visualize, and communicate religious concepts. This perspective offers a more pedagogically grounded model of digital integration in PAI and strengthens the discussion on how technology can support student-centered learning without separating digital tools from instructional strategy.

Research Implications

Theoretically, the findings support an integrated view of digital learning in which technological affordances and cognitive learning strategies work together to shape student

engagement. Active participation should therefore be conceptualized as multidimensional, involving not only visible classroom behavior but also cognitive investment, emotional involvement, and verbal interaction. Future models of digital PAI learning may incorporate these dimensions together with variables such as motivation, self-regulation, teacher facilitation, and collaborative interaction.

Pedagogically, PAI teachers can use Canva-based mind mapping to encourage students to identify key concepts, establish relationships among religious ideas, summarize learning materials, and communicate their understanding visually. The strategy may be strengthened through collaborative discussion, presentation, peer feedback, problem-based activities, and reflective questioning so that digital products become part of an active learning process rather than merely aesthetically attractive assignments.

Institutionally, schools should support digital PAI innovation through adequate technological access, teacher training, and instructional-design development. Professional development should emphasize not only technical Canva skills but also the pedagogical use of mind mapping, student engagement strategies, and assessment of multidimensional participation. Schools should also evaluate whether improvements in digital engagement are sustained across subjects, student groups, and longer learning periods before adopting the approach as a broader instructional model.

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