



Smartphone Usage Predicting Learning Concentration among Muslim High School Students

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Abstract

The rapid advancement of digital technology has increased smartphone use among Muslim high school students in both academic and non-academic activities. While smartphones provide access to educational resources and learning information, excessive use may influence students' learning concentration. This study aims to examine smartphone usage intensity, assess students' learning concentration, and analyze the predictive role of smartphone usage intensity on learning concentration among Muslim high school students. The study employed a quantitative correlational design. Data were collected through questionnaires, observations, and documentation and analyzed using descriptive statistics and simple linear regression with IBM SPSS Statistics. The findings reveal that smartphone usage intensity and students' learning concentration are both categorized as high. Regression analysis indicates that smartphone usage intensity significantly predicts students' learning concentration. These findings suggest that smartphone use plays an important role in shaping students' ability to maintain concentration during learning activities. The study implies the need for appropriate supervision, digital literacy, and responsible smartphone use to support learning effectiveness while minimizing potential distractions.

INTRODUCTION

The development of information and communication technology has brought significant changes to various aspects of life, including education. Advances in digital technology have been accompanied by the increasing use of smartphones among students for communication, information access, entertainment, and learning. In educational contexts, smartphones enable students to access learning resources, digital books, instructional videos, and various educational platforms that support the learning process. The use of digital technology in learning can improve information accessibility and expand students' learning opportunities (Gomez-del Rio & Rodriguez, 2022). However, despite these benefits, uncontrolled smartphone use may also lead to various problems, one of which is reduced learning concentration due to the dominant use of digital devices for non-academic activities.

Learning concentration refers to students' ability to focus their attention on learning materials for a certain period to achieve learning objectives optimally. Learning concentration plays an important role in determining learning success

because it helps students understand, retain, and process information effectively (Fesly & Sulis, 2024; Sartika et al., 2020). Conversely, difficulties in maintaining concentration can hinder students' understanding of learning materials, lower academic achievement, and reduce learning effectiveness. In the digital era, maintaining learning concentration has become a particular challenge because students face various distractions associated with smartphone use, including social media, online games, streaming services, and other entertainment applications.

The relationship between smartphone use and learning concentration has attracted considerable attention from researchers in recent years. High-intensity smartphone use can affect students' focus and attention during the learning process (Fauziah et al., 2022; Khan et al., 2019; Yuwono & Syaifuddin, 2017). Excessive smartphone use has also been associated with a reduced ability to sustain attention to learning materials (Sartika et al., 2020). Frequent use of social media through smartphones has been found to contribute to increased disruptions in students' learning concentration. Furthermore, continuous smartphone use can reduce students' engagement in classroom learning activities (Syahyudin, 2020).

On the other hand, several studies have indicated that smartphone use does not always have negative effects on learning. Using smartphones as learning media can improve access to learning resources and support students' independent learning (Supriatna, 2025). Educational applications based on mobile learning can also enhance students' motivation and engagement in learning activities (Biantoro, 2019). Furthermore, using smartphones for academic purposes can contribute positively to learning effectiveness when their use is purposeful and controlled. These findings suggest that the effects of smartphone use on learning depend largely on the intensity and purpose of its use.

Other studies have shown that the intensity of smartphone use is associated with various psychological and academic aspects of students' lives. Excessive smartphone use can impair students' ability to manage their study time (Wiernik & Kostal, 2019). High-intensity smartphone use can also affect students' learning discipline. Meanwhile, prolonged smartphone use has been correlated with decreased student attention during classroom learning (Kartikaningrum et al., 2023). In contrast, smartphone use directed toward academic activities can help students obtain learning-related information more quickly and efficiently (Wiriawan, 2023). These findings indicate that the relationship between smartphone use and learning concentration remains an important issue for further investigation because previous studies have reported varied results.

Based on preliminary observations, most senior high school students own personal smartphones and use them daily for both academic and non-academic purposes. During classroom instruction, some students have been observed using their smartphones to access social media, play online games, and engage in other activities unrelated to learning. Consequently, their attention to teachers' explanations may be reduced. This situation highlights a discrepancy between the intended function of smartphones as learning tools and their actual use among students. Therefore, the intensity of smartphone use warrants further investigation to determine its effect on students' learning concentration, particularly among Muslim senior high school students.

Previous studies have examined the relationship between smartphone use and students' learning motivation, academic achievement, learning discipline, and learning concentration. However, most have focused on students in general without considering the specific characteristics of Muslim senior high school students or the context of Islamic Religious Education, particularly the Akidah Akhlak subject, which focuses on Islamic creed and moral education. Furthermore, previous studies

have reported mixed findings: some have identified negative effects of smartphone use on learning concentration, whereas others have highlighted its benefits as a learning medium. These inconsistencies indicate the need to re-examine the effect of smartphone use intensity on learning concentration within a more specific educational context.

The novelty of this study lies in its analysis of the effect of smartphone use intensity on learning concentration among Muslim senior high school students studying Akidah Akhlak. Unlike previous studies, which have predominantly examined smartphone use in general, this study investigates the relationship between these two variables within an Islamic educational setting. In addition, this study employs a quantitative correlational approach and simple linear regression analysis to measure the extent to which smartphone use intensity predicts students' learning concentration.

This study makes both theoretical and practical contributions to educational development in the digital era. Theoretically, it enriches the literature on digital technology use and its relationship with learning concentration within the context of Islamic education. Practically, the findings may serve as a basis for evaluation by schools, teachers, and parents in monitoring and guiding students' smartphone use more responsibly. Furthermore, the findings may inform the development of policies governing the use of digital technology to support the learning process without compromising students' concentration. In this way, smartphones can be optimized as effective learning tools. Based on this rationale, this study aims to identify the levels of smartphone use intensity and learning concentration among senior high school students and to analyze the effect of smartphone use intensity on their learning concentration.

METHODS

The study was designed to examine the relationship between smartphone use intensity and learning concentration among senior high school students using a quantitative approach that enables variables to be measured objectively, systematically, and quantitatively. The research method was selected to obtain empirical data on the level of smartphone use intensity, the level of students' learning concentration, and the extent to which the two variables are related. To obtain accurate findings, the study involved several stages, including population and sample determination, research instrument development, data collection, instrument validity and reliability testing, and statistical analysis using IBM SPSS Statistics software. These procedures were designed to ensure a systematic research process and generate valid data for examining the effect of smartphone use intensity on students' learning concentration.

Method and Design

This study employed a quantitative approach with a correlational research design. The quantitative approach was selected because the study aimed to measure the relationship between variables using numerical data analyzed through statistical techniques. Quantitative research is used to test hypotheses and explain relationships between variables based on measurable data (López et al., 2018; Mohajan, 2020). Meanwhile, correlational research aims to determine the strength of the relationship and the predictive influence between independent and dependent variables. Therefore, a correlational design was considered appropriate for examining the effect of smartphone use intensity on learning concentration among senior high school students.

Data Sources

The study was conducted at Senior High School, Indonesia, during the 2025/2026 academic year. The study population consisted of all 25 students in Grade

XII. A census sampling technique (*total sampling*) was employed, whereby all members of the population were included as research respondents. This technique is appropriate when the population is relatively small, allowing all population members to be included in the study (Busetto et al., 2020). The use of this technique enabled the researchers to obtain a more comprehensive picture of the characteristics of the population under investigation. Accordingly, all 25 Grade XII students participated as respondents to provide data on smartphone use intensity and learning concentration.

Instruments

The primary instrument used in this study was a questionnaire developed based on the indicators of each research variable. Smartphone use intensity was measured using indicators of frequency of use, duration of use, purpose of use, and daily smartphone use habits. Meanwhile, learning concentration was measured based on students' ability to focus their attention during the learning process, understand the material being taught, complete assignments, and avoid distractions that could interfere with their concentration. Questionnaires are effective instruments for systematically collecting data on respondents' behaviors, attitudes, and perceptions (Mohajan, 2020; Sürücü & Maslakçi, 2020). In addition to the questionnaire, observation sheets and documentation were used as supporting instruments to strengthen the data obtained from respondents.

Data Collection Techniques

Data were collected through questionnaires, observation, and documentation. The questionnaire served as the primary technique for collecting data on students' smartphone use intensity and learning concentration. Questionnaires enable researchers to collect data efficiently from all respondents using standardized instruments (Engkizar et al., 2025; Han, 2018). Observation was conducted to examine students' behavior directly during classroom learning, particularly their smartphone use and level of learning concentration. Documentation was used to obtain supporting information, including the school profile, student enrollment figures, and other documents relevant to the study. These three techniques were employed to obtain more comprehensive data and support the overall research findings.

Data Validity and Reliability

Data quality was assessed by testing the validity and reliability of the research instruments. The validity test aimed to determine the extent to which each questionnaire item accurately measured the variable under investigation. A valid instrument produces data that are consistent with the intended measurement objectives (Campbell et al., 2020; Gerring, 2017). The test results indicated that all questionnaire items met the validity criteria and were therefore considered suitable for use in the study. Reliability was subsequently assessed using Cronbach's alpha coefficient to determine the internal consistency of the instruments. The results yielded Cronbach's alpha values of 0.944 for smartphone use intensity and 0.959 for learning concentration. Cronbach's alpha values above 0.70 generally indicate acceptable instrument reliability. Therefore, both instruments were considered reliable and suitable for data collection.

Data Analysis Software

The data were analyzed using IBM SPSS Statistics software. This statistical software was selected because it facilitates the processing of quantitative data efficiently, accurately, and systematically. Statistical applications such as SPSS are widely used in quantitative research to examine data, analyze relationships between variables, and test hypotheses objectively. Accordingly, IBM SPSS Statistics was considered appropriate for supporting the analysis of the effect of smartphone use intensity on students' learning concentration (Almquist et al., 2019; Chapman, 2018).

Data Analysis Techniques

Data analysis involved two stages: descriptive statistical analysis and inferential statistical analysis. Descriptive statistics are used to summarize and describe the characteristics of research data without necessarily making broader generalizations. In this study, descriptive statistical analysis was used to describe the levels of smartphone use intensity and learning concentration based on mean scores, frequencies, percentages, and research outcome categories. This analysis provided an overview of each variable before the relationship between the variables was examined.

Inferential statistical analysis was subsequently conducted to test the research hypothesis and examine the effect of smartphone use intensity on students' learning concentration. Inferential statistics are used to test relationships between variables and draw conclusions based on sample data (Dawadi et al., 2021; Lim, 2025). Before hypothesis testing, the data were subjected to a normality test to determine whether they followed a normal distribution and a linearity test to establish whether a linear relationship existed between the independent and dependent variables. These procedures were necessary to assess the assumptions underlying the use of linear regression analysis (Engkizar et al., 2026).

After the relevant assumptions had been assessed, the hypothesis was tested using simple linear regression analysis. Simple linear regression is used to estimate the relationship between one independent variable and one dependent variable and to predict changes in the dependent variable based on the independent variable. In this study, simple linear regression was employed to examine the effect of smartphone use intensity as the independent variable on students' learning concentration as the dependent variable. All statistical tests were conducted at a significance level of 5% (α alpha = 0.05). The resulting analyses were used to evaluate the relationship between the two variables and determine whether the observed effect was statistically significant.

RESULT AND DISCUSSION

The findings indicate that smartphone use has become an integral part of learning activities among senior high school students. Smartphones are used not only to access information and support academic activities but also for various non-academic activities that may influence students' learning behaviors. Based on the data analysis, this study identified two main findings: the levels of smartphone use intensity and students' learning concentration, and the effect of smartphone use intensity on learning concentration. These findings provide an overview of how digital technology use can contribute to the learning process while also presenting challenges in maintaining students' focus and attention during learning activities. Therefore, the findings are discussed through descriptive analyses of the research variables and an examination of the effect of smartphone use intensity on students' learning concentration.

Descriptive Analysis of Smartphone Use Intensity

Data on smartphone use intensity were collected using a questionnaire consisting of 10 items measuring frequency of use, duration of use, purposes of use, and smartphone use habits in everyday life. Based on the data analysis, students' smartphone use intensity was classified as high. The summary of smartphone use intensity scores is presented in Table 1.

Table 1. Summary of Smartphone Use Intensity Scores

Description	Value
Number of Respondents	25
Maximum Score	40
Minimum Score	20
Highest Score	40

Percentage	75.3%
Category	High

Based on Table 1, the percentage was 75.3%, indicating that smartphone use intensity fell into the high category. This finding indicates that most students use smartphones relatively frequently and for extended periods in their daily activities. Such use is not limited to supporting learning activities, such as searching for information and accessing learning resources, but also includes various non-academic activities, such as social media use, digital entertainment, and communication. This condition suggests that smartphones have become an important part of students' lives and may influence their learning behaviors.

Descriptive Analysis of Learning Concentration

Data on learning concentration were collected using a questionnaire consisting of 10 items measuring students' ability to focus their attention, understand learning materials, complete assignments, and avoid distractions that could reduce their concentration. The results of the data analysis indicated that students' learning concentration was classified as high. A summary of learning concentration scores is presented in Table 2.

Table 2. Summary of Students' Learning Concentration Scores

Description	Value
Number of Respondents	25
Percentage	67.9%
Category	High

Based on Table 2, the percentage was 67.9%, indicating that students' learning concentration fell into the high category. This result suggests that most students have a relatively good ability to maintain their attention during the learning process. Nevertheless, observational findings indicated that some students were occasionally distracted by smartphone use during classroom learning. This condition suggests that although students' overall learning concentration was classified as high, their attention to learning activities was not yet fully optimal because it remained influenced by external factors, including the use of digital devices.

Tests of Analytical Assumptions

Normality Test

The Shapiro–Wilk test was used to determine whether the research data were normally distributed before conducting simple linear regression analysis. Normality is an important assumption in parametric statistical analysis and helps ensure the appropriate interpretation of hypothesis-testing results. The results of the normality test are presented in Table 3.

Table 3. Results of the Normality Test

Variable	Statistic	Sig.
Smartphone Usage Intensity	0.883	0.690
Learning Concentration	0.882	0.328

Based on Table 3, the significance value (Sig.) was 0.690 for smartphone use intensity and 0.328 for learning concentration. Both values exceeded the significance level of 0.05, indicating that the data did not show statistically significant departures from normality according to the Shapiro–Wilk test. Thus, the data met the normality criterion considered in the analysis. However, for linear regression, the normality assumption should ideally be assessed using the regression residuals.

Hypothesis Testing

The hypothesis was tested using simple linear regression analysis to examine the effect of smartphone use intensity on students' learning concentration. The regression analysis results are presented in Table 4.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.846	0.715	0.703	2.500

Based on Table 4, the R value was 0.846, indicating a very strong relationship between smartphone use intensity and learning concentration in terms of the strength of their association. This value suggests that variations in smartphone use intensity are closely associated with variations in students' learning concentration. In addition, the R Square value was 0.715, indicating that 71.5% of the variance in students' learning concentration could be statistically explained by smartphone use intensity in the fitted regression model. The remaining 28.5% was attributable to other factors not examined in this study, such as learning motivation, family environment, teaching methods, students' psychological conditions, and other social and academic factors.

The high coefficient of determination indicates that smartphone use intensity accounts for a substantial proportion of the variance in students' learning concentration within the regression model. Therefore, smartphone use is an important variable to consider when seeking to improve learning quality, particularly in maintaining students' focus and attention throughout the learning process.

The findings indicate that smartphone use intensity among Grade XII students was classified as high, with a percentage of 75.3%, while students' learning concentration was also classified as high, with a percentage of 67.9%. These findings suggest that smartphones have become an integral part of students' daily lives, serving both academic and non-academic purposes. In the learning context, smartphones are used to access learning materials, search for information, communicate with teachers and peers, and support various learning activities. However, the high intensity of smartphone use also suggests that students may have greater opportunities to become distracted by activities unrelated to learning, such as social media, online games, and digital entertainment.

The simple linear regression analysis yielded the equation ($Y = 15.427 - 0.304X$). This equation indicates that each one-unit increase in smartphone use intensity is associated with a 0.304-unit decrease in learning concentration, according to the fitted regression model. The negative regression coefficient indicates an inverse relationship between the two variables: as smartphone use intensity increases, students' learning concentration tends to decrease. Conversely, lower smartphone use intensity is associated with higher learning concentration. This finding suggests that excessive smartphone use may reduce students' ability to maintain their attention during the learning process.

The hypothesis-testing results indicated that smartphone use intensity had a statistically significant association with students' learning concentration. This was indicated by a reported significance value of 0.000, which was below the significance threshold of 0.05. In statistical reporting, this value should be expressed as ($p < 0.001$) rather than ($p = 0.000$). Accordingly, the null hypothesis of no statistically significant regression relationship was rejected, supporting the research hypothesis that smartphone use intensity is significantly associated with students' learning concentration. Furthermore, the R value of 0.846 indicated a very strong relationship between smartphone use intensity and learning concentration. Meanwhile, the R Square value of 0.715 indicated that 71.5% of the variance in students' learning concentration could be explained statistically by smartphone use intensity, whereas the remaining 28.5% was associated with factors outside the scope of this study, such as learning motivation, family environment, teaching methods, students' psychological conditions, and other social factors (Ghofurrohman et al., 2023; Retalia et al., 2022; Yuwono & Syaifuddin, 2017).

The findings indicate that although students' overall learning concentration remained in the high category, increasing smartphone use intensity may be associated with reduced focus during classroom learning. This condition may occur because students' attention is divided between learning activities and digital activities

performed on their smartphones. Consequently, students may become more easily distracted, pay less attention to teachers' explanations, and experience difficulty maintaining concentration for extended periods. Therefore, uncontrolled smartphone use may be one of the factors associated with the effectiveness of the learning process.

These findings are consistent with various theories and previous studies suggesting that excessive smartphone use can interfere with students' learning concentration. The high intensity of digital device use may make students' attention more susceptible to distraction, thereby reducing their ability to focus on learning materials. Nevertheless, the findings also suggest that smartphones do not necessarily have negative effects. When used responsibly and in accordance with academic needs, smartphones can function as effective learning tools for accessing learning resources, finding references, broadening knowledge, and supporting students' independent learning activities (Abulhul, 2021; Tandilino et al., 2025).

Overall, the findings indicate that smartphone use intensity plays an important role in understanding variations in students' learning concentration. Proportionate and purposeful smartphone use can benefit the learning process, whereas excessive and uncontrolled use may be associated with reduced learning concentration (Díez et al., 2020). Therefore, supervision by schools and parents, improved digital literacy, and the development of responsible smartphone use habits are necessary to ensure that digital technology can be used optimally to support learning achievement without undermining students' ability to concentrate.

CONCLUSION

Both the intensity of smartphone use and students' concentration while studying fall into the high category. The research analysis shows that the intensity of smartphone use has a significant effect on students' concentration while studying. The relationship is negative, meaning that the higher the intensity of smartphone use, the lower students' tendency to concentrate while studying. These findings indicate that uncontrolled smartphone use has the potential to reduce students' focus during the learning process, even though these devices also offer benefits as tools for accessing information and as learning resources.

The novelty of this study lies in its examination of the effect of smartphone usage intensity on learning concentration among Muslim high school students in the context of Akidah Akhlak instruction. The research findings imply that smartphone use needs to be guided more wisely through the strengthening of digital literacy, supervision by schools and parents, and the integration of technology that supports learning objectives. Thus, smartphones can be utilized as an effective learning medium without diminishing students' ability to focus and maintain concentration during the learning process.

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Author contribution

Juliana Arista: data curation, writing-original draft preparation, editing, analysis,
Muhammad Subhan: conceptualization, visualization, methodology.

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The data and the grammatical structure in this article have been validated and verified by English language experts and no AI-generated sentences are included in this

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Conflict of interest

The authors declare that this research was conducted without any conflict of interest in the research.

Ethical clearance

The research company has agreed to carry out the research and is willing if the results of this research are published.

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REFERENCES

- Abulhul, Z. (2021). Teaching Strategies for Enhancing Student's Learning. *Journal of Practical Studies in Education*, 2(3), 1–4. <https://doi.org/10.46809/jpse.v2i3.22>
- Almquist, Y. B., Kvar, S., & Brännström, L. (2019). A practical guide to quantitative methods with SPSS. *Research Reports in Public Health Sciences*, 2(November), 1–347. <https://doi.org/https://doi.org/10.17045/sthlmuni.10321829>
- Biantoro, O. F. (2019). Urgency of Islamic Religious Education Teachers in Character Building for Students in Junior High Schools. *AL-HAYAT: Journal of Islamic Education*, 3(2), 178. <https://doi.org/10.35723/ajie.v3i2.83>
- Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, 2(1), 14. <https://doi.org/10.1186/s42466-020-00059-z>
- Campbell, R., Goodman-Williams, R., Feeney, H., & Fehler-Cabral, G. (2020). Assessing Triangulation Across Methodologies, Methods, and Stakeholder Groups: The Joys, Woes, and Politics of Interpreting Convergent and Divergent Data. *American Journal of Evaluation*, 41(1), 125–144. <https://doi.org/10.1177/1098214018804195>
- Chapman, S. J. (2018). Review of Discovering Statistics Using IBM SPSS Statistics, 4th Edition. *Journal of Political Science Education*, 14(1), 145–147. <https://doi.org/10.1080/15512169.2017.1366328>
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education*, 2(2), 25–36. <https://doi.org/10.46809/jpse.v2i2.20>
- Díez, F., Villa, A., López, A. L., & Iraurgi, I. (2020). Impact of quality management systems in the performance of educational centers: educational policies and management processes. *Heliyon*, 6(4), e03824. <https://doi.org/10.1016/j.heliyon.2020.e03824>
- Engkizar, E., Jaafar, A., Alias, M., Guspita, B., & Albizar, R. (2025). Utilisation of Artificial Intelligence in Qur'anic Learning: Innovation or Threat? *Journal of Quranic Teaching and Learning*, 1(2), 1–17. <https://joqer.intischolar.id/index.php/joqer/index>
- Engkizar, E., Jaafar, A., Azzahra, N., Hamzah, M. I., Syafril, S., Febriani, A., & Oktavia, G. (2026). Five Core Competencies of Professional Quran Teachers: Conceptualization and Practice. *International Journal of Multidisciplinary Research of*

- Higher Education (IJMURHICA)*, 7(4), 395–410.
<https://doi.org/https://doi.org/10.24036/ijmurhica.v7i4.696>
- Fauziah, Z., Shofiyuddin, A., & Rofiana, H. (2022). Implementasi Media Pembelajaran Interaktif Berbasis Aplikasi Canva Pada Mata Pelajaran Sejarah Kebudayaan Islam. *Madinah: Jurnal Studi Islam*, 9(1), 7–18.
<https://doi.org/10.58518/madinah.v9i1.1356>
- Fesly, K., & Sulis, N. F. (2024). Dampak Penggunaan Smartphone Terhadap Karakter Peserta Didik. *Prosiding Seminar Nasional Ilmu Pendidikan*, 1(1), 69–81.
<https://doi.org/10.62951/prosemnasipi.v1i1.9>
- Gerring, J. (2017). Qualitative Methods. *Annual Review of Political Science*, 20(1), 15–36.
<https://doi.org/10.1146/annurev-polisci-092415-024158>
- Ghofururrohim, N. M., Wicaksono, R. N., & Faristiana, A. R. (2023). Pengaruh Smartphone Terhadap Anak Usia Dini. *Education : Jurnal Sosial Humaniora Dan Pendidikan*, 3(2), 129–146. <https://doi.org/10.51903/education.v3i2.340>
- Gomez-del Rio, T., & Rodriguez, J. (2022). Design and assessment of a project-based learning in a laboratory for integrating knowledge and improving engineering design skills. *Education for Chemical Engineers*, 40, 17–28.
<https://doi.org/10.1016/j.ece.2022.04.002>
- Han, C. (2018). Quantitative research methods in translation and interpreting studies. *The Interpreter and Translator Trainer*, 12(2), 244–247.
<https://doi.org/10.1080/1750399X.2018.1466262>
- Kartikaningrum, D. M., Handayani, A., & Rakhmawati, D. (2023). Pengaruh Penggunaan Gadget Terhadap Pola Interaksi Sosial Siswa Di Sekolah Dasar. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 8(1), 6722–6731.
<https://doi.org/10.36928/jipd.v3i1.201>
- Khan, A. A., Khalid, A., & Iqbal, R. (2019). Revealing the relationship between smartphone addiction and academic performance of students: Evidences from higher educational Institutes of Pakistan. *Pakistan Administrative Review*, 3(2), 74–83. <https://doi.org/https://nbn-resolving.org/urn:nbn:de:0168-ssor-63203-4>
- Lim, W. M. (2025). What Is Quantitative Research? An Overview and Guidelines. *Australasian Marketing Journal*, 33(3), 325–348.
<https://doi.org/10.1177/14413582241264622>
- López, N., Erwin, C., Binder, M., & Chavez, M. J. (2018). Making the invisible visible: advancing quantitative methods in higher education using critical race theory and intersectionality. In *QuantCrit* (Vol. 21, Issue 2, pp. 180–207).
<https://doi.org/10.1080/13613324.2017.1375185>
- Mohajan, H. K. (2020). Quantitative Research: A Successful Investigation in Natural and Social Sciences. *Journal of Economic Development, Environment and People*, 9(4), 50–79. <https://doi.org/10.26458/jedep.v9i4.679>
- Retalia, R., Soesilo, T. D., & Irawan, S. (2022). Pengaruh Penggunaan Smartphone Terhadap Interaksi Sosial Remaja. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 12(2), 139–149. <https://doi.org/10.24246/j.js.2022.v12.i2.p139-149>
- Sartika, F., Ritonga, M., & Rasyid, A. (2020). Implementation of Islamic Religious Education in Madrasah Ibtidaiyah During Covid-19 Pandemic. *Khalifa: Journal of Islamic Education*, 4(2), 97. <https://doi.org/10.24036/kjie.v4i2.95>
- Supriatna, D. (2025). Development of an Online-Based Islamic Education Management System in Islamic Primary Education Institutions. *Journal of Asian Primary Education (JoAPE)*, 2(1), 14–27.
<https://doi.org/10.59966/joape.v2i1.1645>
- SÜRÜCÜ, L., & MASLAKÇI, A. (2020). Validity and Reliability in Quantitative Research. *Business & Management Studies: An International Journal*, 8(3), 2694–2726.
<https://doi.org/10.15295/bmij.v8i3.1540>
- Syahyudin, D. (2020). Pengaruh Gadget Terhadap Pola Interaksi Sosial Dan

- Komunikasi Siswa. *Gunabumas*, 2(1), 272–282.
<https://doi.org/10.17509/ghm.v2i1.23048>
- Tandilino, C., Pontoh, G. T., Darmawati, D., & Indrijawati, A. (2025). Digital Financial Inclusion as a Mediator of Digital Financial Literacy and Government Support in MSME Performance. *International Journal of Financial Studies*, 13(4), 199. <https://doi.org/10.3390/ijfs13040199>
- Wiernik, B. M., & Kostal, J. W. (2019). Protean and boundaryless career orientations: A critical review and meta-analysis. *Journal of Counseling Psychology*, 66(3), 280–307. <https://doi.org/10.1037/cou0000324>
- Wiriawan, I. K. (2023). The Influence of Self-Confidence on Student Learning Outcomes: A Study on 10th Grade Students in High Schools in The Bebandem District, Karangasem Regency, Bali Province. *Journal of Social Research*, 2(11), 3912–3919. <https://doi.org/10.55324/josr.v2i11.1505>
- Yuwono, M. R., & Syaifuddin, M. W. (2017). Pengembangan problem based learning dengan assessment for learning berbantuan smartphone dalam pembelajaran matematika. *Beta: Jurnal Tadris Matematika*, 10(2), 184–202. <https://doi.org/10.20414/betajtm.v10i2.116>

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