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Digital-Based Education in the Era of Society 5.0: Synergy of Digital Literacy and Learning Motivation to Improve Student Learning Outcomes

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ABSTRACT*:*
This study examines the relationship and combined influence of digital literacy and learning motivation on the academic performance of Islamic Education Management (MPI) students in two until six semesters during the Society 5.0 era. Using a quantitative correlational and multiple regression design, 98 students were selected as samples. Instruments included a digital literacy questionnaire covering eight dimensions of competence and a learning motivation questionnaire adapted from the MSLQ. Learning outcomes were measured by students' Grade Point Average (GPA). Data were analyzed using descriptive statistics, Pearson correlation, and multiple linear regression with SmartPLS 4.0. The findings reveal that (1) digital literacy has a positive and significant relationship with learning outcomes; (2) learning motivation also positively and significantly correlates with learning outcomes; and (3) both variables jointly exert a significant effect on students' learning outcomes. The R-square value indicates that digital literacy and motivation together make a substantial contribution in explaining variations in academic achievement. The study concludes that synergy between digital competence and strong learning motivation is crucial in digital-based education to enhance MPI students' performance. Practically, it underscores the need for integrated programs that strengthen digital literacy and foster intrinsic motivation among students.

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ABSTRAK:

Penelitian ini mengkaji hubungan dan pengaruh gabungan literasi digital dan motivasi belajar terhadap kinerja akademik mahasiswa Manajemen Pendidikan Islam (MPI) pada semester dua sampai dengan enam pada era Society 5.0. Dengan menggunakan desain korelasi kuantitatif dan regresi berganda, 98 siswa dipilih sebagai sampel. Instrumen termasuk kuesioner literasi digital yang mencakup delapan dimensi kompetensi dan kuesioner motivasi belajar yang diadaptasi dari MSLQ. Hasil belajar diukur dengan Indeks Prestasi (IPK) siswa. Data dianalisis menggunakan statistik deskriptif, korelasi Pearson, dan regresi linier berganda dengan SmartPLS 4.0. Temuan mengungkapkan bahwa (1) literasi digital memiliki hubungan positif dan signifikan dengan hasil pembelajaran; (2) motivasi belajar juga berkorelasi positif dan signifikan dengan hasil belajar; dan (3) kedua variabel tersebut bersama-sama memberikan pengaruh yang signifikan terhadap hasil belajar siswa. Nilai R-square menunjukkan bahwa literasi dan motivasi digital bersama-sama memberikan kontribusi substansial dalam menjelaskan variasi prestasi akademik. Studi ini menyimpulkan bahwa sinergi antara kompetensi digital dan motivasi belajar yang kuat sangat penting dalam pendidikan berbasis digital untuk meningkatkan kinerja siswa MPI. Secara praktis, ini menggarisbawahi perlunya program terpadu yang memperkuat literasi digital dan menumbuhkan motivasi intrinsik di kalangan siswa.

Kata kunci: Literasi, Digital, Pendidikan, Motivasi, Capaian Belajar.

INTRODUCTION

The rapid advancement of digital technology has brought significant transformations to the global education landscape, especially in higher education. This shift has redefined learning paradigms, emphasizing technology-driven processes that integrate innovation, connectivity, and accessibility. Students are now required to possess comprehensive digital literacy skills to access, evaluate, and utilize information effectively, both cognitively and ethically. Digital literacy encompasses not only technical proficiency but also cognitive and social competencies essential for active participation in the digital learning environment. Consequently, digital literacy has become a foundational element in fostering meaningful learning and academic success in higher education (Barus et al., 2023; Hidayat et al., 2024).

Previous studies have highlighted that digital literacy significantly influences students' personal learning competence, particularly when moderated by psychosocial factors such as the "fear of missing out" (Hidayat et al., 2024). This finding underscores that digital literacy is not merely a technical skill but also a determinant of self-directed learning capacity. Moreover, motivation plays an equally important role in shaping academic achievement. Students with high learning motivation tend to engage more actively, while those with low motivation often struggle to reach optimal outcomes (Lingga et al., 2024). Research confirms that both digital literacy and learning motivation jointly contribute to improved learning performance among Generation Z students (Jannana et al., 2024; Jayadi et al., 2025).

In the context of Islamic education, the influence of digital literacy and learning motivation extends beyond cognitive skills to include moral and spiritual dimensions. Studies conducted in Islamic learning environments, such as MA Badrul Islam Gulung, have shown that digital literacy significantly affects learning motivation and academic achievement in religious subjects (Jayadi et al., 2025). Likewise, community-based initiatives in Islamic education have demonstrated how digital competence enhances literacy engagement and creative participation (Jannana et al., 2024). These findings affirm that digital literacy and motivation together can strengthen students' intellectual and ethical growth, particularly in education systems integrating technology with religious values.

This educational transformation is closely tied to the concept of Society 5.0, a vision introduced by Japan that integrates advanced technologies—such as artificial intelligence (AI), the Internet of Things (IoT), and Big Data—into daily life to promote a human-centered society (Wahyu Purnomo & Herwin, 2020). Unlike the Industrial Revolution 4.0, which focused primarily on technological advancement, Society 5.0 seeks to balance innovation with human values (Barus et al., 2023; Sarpong et al., 2023). In Indonesia, this paradigm demands universities to reform curricula, strengthen digital infrastructure, and develop competencies among lecturers and students. Graduates are expected to master not only disciplinary knowledge but also twenty-first-century skills—creativity, critical thinking, communication, and collaboration (Puspa et al., 2023). Thus, higher education must integrate humanistic values with technological adaptation to ensure holistic learning.

Nevertheless, the implementation of digital-based education faces persistent challenges in the Society 5.0 era. Infrastructure inequalities and uneven internet access continue to hinder digital inclusivity, particularly in rural areas. Educators' readiness to integrate technology effectively also remains a critical issue, requiring systematic and continuous training (Syah et al., 2019). Moreover, the risk of dehumanization in learning arises when efficiency is prioritized over empathy and human interaction (Sucipto, 2024; Sukari & Nurachman, 2024). These issues reveal the paradox between technological optimization and the human-centered philosophy of Society 5.0, emphasizing the need for balance between innovation and ethical education.

Bridging this tension requires focusing on two key internal factors: digital literacy and learning motivation. Digital literacy should be viewed not only as the ability to operate digital tools but also as the capacity to think critically, communicate ethically, and engage responsibly in digital environments (Putrayasa et al., 2024; Yanti et al., 2021). For Islamic Education Management (MPI) students, it includes Islamic digital ethics and the ability to evaluate content according to moral and religious principles (Ismuwardani et al., 2024; Wahyuni et al., n.d.). Meanwhile, learning motivation serves as the psychological fuel that sustains persistence and self-discipline in digital-based learning (Hasibuan & Nasution, 2024; Herawaty, 2023). When both competencies interact effectively, they can enhance students' independence, creativity, and overall academic achievement.

However, existing studies have largely examined digital literacy and learning motivation as separate constructs, with limited exploration of their synergistic impact on learning outcomes (Lingga et al., 2024; Mulyati, 2023). Few have addressed this relationship within Islamic higher education, where the integration of technology must coexist with ethical, spiritual, and cultural values (Puput Budiarti et al., n.d.; Sarpong et al., 2023). The gap in understanding how these two factors jointly contribute to learning performance in the Society 5.0 context highlights the need for further empirical investigation (Barus et al., 2023; Wahyu Purnomo & Herwin, 2020). This study, therefore, examines the relationship and synergistic influence of digital literacy and learning motivation on the academic outcomes of MPI students.

The objective of this research is to describe the level of digital literacy, learning motivation, and learning outcomes of MPI students in two until six semesters; to analyze the relationship between digital literacy and their learning outcomes; to examine the relationship between learning motivation and their learning outcomes; and to investigate the simultaneous influence or synergy between digital literacy and learning motivation on the learning outcomes of MPI students in two until six semesters. It is hoped that the findings from this research can provide theoretical contributions regarding interactions between variables in the context of PBD in the Society 5.0 era, as well as provide practical input for managers of MPI study programs and higher education institutions in designing more effective learning strategies and student development programs to improve learning outcomes in the digital era.

METHODS

This study employed a quantitative explanatory design to examine the causal relationships among digital literacy (X1), learning motivation (X2), and learning outcomes (Y) of students in the Islamic Education Management (MPI) program. The approach aimed to analyze both direct and indirect effects between constructs using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 4.0, which is suitable for complex models and small-to-medium samples (Hidayat et al., 2024; Jayadi et al., 2025). The population included all active MPI students in semesters two to six, and 98 participants were selected using proportional stratified random sampling. Ethical clearance was obtained from the institution, with participants providing informed consent. Confidentiality and anonymity were maintained throughout the research process (Jannana et al., 2024).

Three variables were analyzed: digital literacy, learning motivation, and learning outcomes. Digital literacy was defined as the ability to access, evaluate, and communicate information critically and ethically through digital technologies (Putrayasa et al., 2024). Learning motivation referred to the internal and external drivers influencing students' engagement and persistence in learning (Hasibuan & Nasution, 2024), while learning outcomes were measured through the students' official Grade Point Average (GPA) obtained from institutional records. Data were collected via online questionnaires distributed through Google Forms and matched with GPA data provided by the academic office (Ismuwardani et al., 2024).

Two main instruments were used: the Digital Literacy Questionnaire adapted from Syahwela et al., consisting of 24 items across eight dimensions on a 5-point Likert scale, and the Learning Motivation Questionnaire from the motivational section of the MSLQ by Pintrich et al., containing 31 items on a 7-point Likert scale (Herawaty, 2023; Mulyati, 2023). Both instruments had established construct validity (factor loading > 0.5) and reliability (Cronbach's $\alpha > 0.85$; AVE > 0.5). Pilot testing was conducted to confirm consistency in the local context, and data completeness was verified before analysis.

Data analysis followed two stages in PLS-SEM: measurement model testing and structural model testing. The outer model evaluated convergent validity (loading > 0.70, AVE > 0.50), discriminant validity, and reliability using Cronbach's alpha and composite reliability (> 0.70). The inner model assessed the coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2). Hypothesis testing was performed with bootstrapping using 5,000 subsamples, where paths were deemed significant at $t > 1.96$ and $p < 0.05$ (Lingga et al., 2024). These analytical steps ensured robust, valid, and reliable results aligned with methodological standards in educational research (Barus et al., 2023; Wahyu Purnomo & Herwin, 2020).

FINDINGS AND DISCUSSION

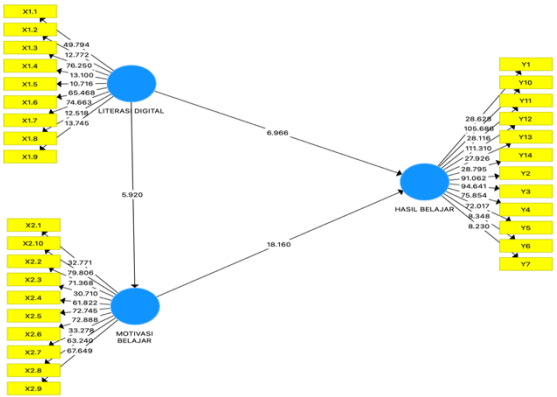
FINDINGS

Data analysis in this study was conducted using SmartPLS 4.0, which included two main stages: evaluation of the outer model (validity and reliability tests) and the inner model (structural model analysis). The outer model assessed convergent validity, discriminant validity, and internal consistency reliability, while the inner model tested the coefficient of determination (R-square), effect size (F-square), and hypothesis testing.

Outer Model

Convergent validity testing aimed to determine the relationship between indicators and their latent constructs. The results of this evaluation confirmed that all indicators met the minimum loading factor requirements, indicating satisfactory convergent validity, as presented in figure 1.

Figure 1. Outer Model Evaluation



Discriminant validity was tested using the Average Variance Extracted (AVE) values. As shown in table 1, all AVE values exceeded 0.50, which means that each construct has good discriminant validity and can be empirically distinguished from other variables (Ghozali, 2014). Table 1 presents the results of the Average Variance Extracted (AVE).

Table 1. Average Variance Extracted (AVE)

Variable	**AVE**	**Information**
Digital Literacy	0.702	Valid
Motivation to learn	0.862	Valid
Learning outcomes	0.798	Valid

Source: Data Processing Results

In table 1, the Average Variance Extracted (AVE) values for all variables—Digital Literacy (0.702), Motivation to Learn (0.862), and Learning Outcomes (0.798)—are higher than the minimum threshold value of 0.50. These results indicate that each construct is capable of explaining more than half of the variance of its respective indicators, which demonstrates good convergent validity. The findings confirm that the indicators used in this study accurately measure their intended latent variables, meaning that the constructs of digital literacy, learning motivation, and learning outcomes are empirically distinct and well-defined. Consequently, all variables can be considered valid and suitable for further analysis in the structural model stage, as they meet the recommended criteria for discriminant validity and internal consistency in quantitative research.

The internal consistency reliability test was conducted using both Cronbach's Alpha and Composite Reliability. According to Abdillah (2018), a construct is considered reliable if the Composite Reliability exceeds 0.70 and Cronbach's Alpha exceeds 0.60 (Abdillah & Hartono, 2018). The results in table 2 show that all three constructs—digital literacy, learning motivation, and learning outcomes—meet these criteria, indicating high reliability, as presented in table 2.

Table 2. Consistency Reliability Values.

Variable	Cronbach's Alpha	Composite Reliability	Information
Motivation to learn	0.982 > 0,60	0.984 > 0,70	Reliable
Digital Literacy	0.946 > 0,60	0.955 > 0,70	Reliable
Learning outcomes	0.978 > 0,60	0.979 > 0,70	Reliable

Source: Data Processing Results

The internal consistency reliability values presented in table 2, following the respecification of the measurement model, indicate that the three latent constructs—digital literacy, learning motivation, and learning outcomes—exhibit strong reliability. The composite reliability values for these constructs are 0.984 for digital literacy, 0.955 for learning motivation, and 0.979 for learning outcomes, all of which exceed the acceptable threshold of 0.70. Additionally, the Cronbach's Alpha values are 0.982 for digital literacy, 0.946 for learning motivation, and 0.978 for learning outcomes, all surpassing the minimum requirement of 0.60. Therefore, it can be concluded that these three latent constructs (digital literacy, learning motivation, and learning outcomes) are reliable and can be further analyzed in the next stage, which is the analysis of the inner model. so that they can be analyzed to the next stage, namely the analysis of the inner model.

Inner Model

The inner model analysis tested the relationships between exogenous and endogenous variables as hypothesized. The R-square value was used to measure the explanatory power of the independent variables, while the F-square value assessed the magnitude of each variable's influence. The results are presented in table 3 and table 4.

Table 3. R-Square Measurement Results

Variable	R Square	R Square Adjusted	Category
Learning outcomes_	0.968 > 0,67	0.967	Good
Motivation to learn	0.335 > 0,33	0.328	Currently

Source: Data Processing Results

The R Square results presented in table 3 indicate that the R Square value for the Learning Outcomes variable is 0.968, or 96%. This suggests that digital literacy and learning motivation together account for 96% of the variability in learning outcomes, which falls into the good category. The remaining percentage is attributed to other variables not included in the study.

In contrast, the R Square value for the Learning Motivation variable is 0.335, or 33%. This means that digital literacy contributes to 33% of the variability in learning motivation, placing it in the medium category. Again, other variables outside the research model explain the rest of the variance. Table 3 above show that the R Square value of the Learning Outcomes variable is 0.968 or 96%, which means that the contribution of digital literacy and learning motivation variables to learning outcomes is 96%, which is included in the good category. Meanwhile, other variables outside the research model contribute to or explain the rest. Furthermore, the R Square value of the learning motivation variable is 0.335 or 33%, which means that the contribution of the digital literacy variable to learning motivation is 33%, so it is included in the medium category. Meanwhile, other variables outside the research model contribute to or explain the rest.

To determine the strength of these relationships, the F-square test was performed. According to Cohen's (1988) classification, an F^2 value of 0.02 indicates a small effect, 0.15 a moderate effect, and 0.35 a large effect (Cohen, 2010). The results are shown in table 4.

Table 4. F-Square Values

Variable	Learning outcomes_	Motivation
Learning outcomes		
Digital Literacy_	1.378	0.503
Motivation to learn	13.665	

Source: Data Processing Results

The results shown in table 4 indicate that digital literacy has a strong influence on learning outcomes, with an F^2 value of 1.378, which exceeds the threshold of 0.35 for a large effect. This means that the higher the level of students' digital literacy, the greater their ability to achieve improved learning outcomes. Students who are digitally literate tend to manage digital tools more effectively, utilize information resources efficiently, and apply critical thinking skills in their studies. These competencies enable them to participate more actively in digital learning environments and contribute to the improvement of their academic performance.

Furthermore, digital literacy also demonstrates a substantial effect on learning motivation, with an F^2 value of 0.503, which is categorized as a high effect. This finding indicates that digital literacy not only enhances students' technical abilities but also influences their enthusiasm and persistence in learning. When students are proficient in using digital platforms, they tend to develop a stronger sense of control and confidence in their learning process. Consequently, they are more engaged, collaborative, and motivated to achieve academic success. This relationship shows that digital competence functions as a catalyst that stimulates intrinsic motivation in the context of digital-based learning.

In addition, learning motivation shows a very large effect on learning outcomes, with an F^2 value of 13.665, far exceeding the threshold for a strong effect. This result confirms that motivation plays a pivotal role in determining students' academic performance. Motivated students exhibit greater focus, perseverance, and willingness to engage in challenging learning tasks, resulting in improved learning outcomes. Thus, motivation serves as a key mediating factor that links digital literacy with academic achievement, emphasizing the importance of fostering both technological skills and motivational readiness to optimize student success in the digital era.

Hypothesis Testing

The results of data management that researchers have carried out are used to answer the hypothesis by looking at the t statistic and P value. The hypothesis is accepted if the t statistic value > t table, namely 1,658 and the P value < 0.5 (Muniarti & Latan, 2013). The following are the results of hypothesis testing obtained by researchers using the inner model. The calculation results are based on the bootstrap method with the SmartPLS program. The score value

for each dimension has a significant influence. The results are presented in table 5.

Table 5. Direct Effect Results

Correlation (Connection)	Direct Effect	
	T-Statistic	P-Value (1-Tailed)
Digital Literacy => Learning Outcomes	6.966 < 1.660	0.000
Digital Literacy => Learning Motivation	5.920 > 1.660	0.000
Learning Motivation => Learning Results	18.160 > 1.660	0.000

Source: Data Processing Results

The results presented in table 5 show that digital literacy has a positive and significant effect on learning outcomes. The analysis reveals an original sample value of 0.258 with a *t*-statistic of 6.966, which exceeds the *t*-table value of 1.660, and a *p*-value of 0.000, which is below the 0.05 significance level. These findings indicate that hypothesis (Ha_1) is accepted and the null hypothesis (H_0) is rejected. Therefore, it can be concluded that higher levels of digital literacy lead to improved learning outcomes among students. This result emphasizes that students who possess stronger digital skills are better able to access, evaluate, and utilize information effectively, which enhances their academic performance.

Furthermore, digital literacy also demonstrates a significant and positive influence on learning motivation. The findings show an original sample value of 0.579 with a *t*-statistic of 5.920 and a *p*-value of 0.000, confirming that hypothesis (Ha_2) is accepted and the null hypothesis (H_0) is rejected. This indicates that digital literacy contributes meaningfully to strengthening students' motivation to learn. Students with higher digital literacy tend to engage more actively in learning activities, make better use of digital platforms, and exhibit greater confidence in managing their own learning processes. Thus, digital competence not only enhances students' technical capabilities but also stimulates their intrinsic motivation to achieve academic success.

In addition, learning motivation itself has a positive and significant effect on learning outcomes. The results show an original sample value of 0.812 with a *t*-statistic of 18.160, surpassing the *t*-table value of 1.660, and a *p*-value of 0.000, which meets the significance criteria. These findings confirm that hypothesis (Ha_3) is accepted, indicating that learning motivation directly influences student academic performance. Students who possess high learning

motivation are more persistent, engaged, and disciplined in completing their academic tasks, leading to improved learning outcomes. This demonstrates that motivation serves as a crucial internal factor that transforms digital literacy into effective academic achievement in digital-based education environments.

The results indicate that all relationships between variables are positive and significant. Digital literacy significantly influences both learning motivation and learning outcomes, while learning motivation also has a strong and significant impact on learning outcomes. These findings confirm that higher digital literacy enhances students' learning motivation, which in turn leads to better academic performance.

The findings section has presented the results of statistical analyses, including the evaluation of the measurement model (outer model), structural model (inner model), and hypothesis testing using PLS-SEM. These results demonstrate the significant influence of digital literacy and learning motivation on student learning outcomes, both individually and simultaneously. To provide a deeper understanding, the next section discusses the interpretation of these findings in relation to relevant theories and previous empirical studies. This discussion aims to highlight the implications of the results, identify areas of agreement or divergence with prior research, and situate the findings within the broader context of digital-based education in the Society 5.0 era.

DISCUSSION

This study set out to investigate the relationship between digital literacy, learning motivation, and learning outcomes among Islamic Education Management (MPI) students within the framework of digital-based education in the Society 5.0 era. As education increasingly integrates digital technologies, understanding how students' technological competencies and motivational factors influence their academic success becomes essential. Prior research highlights that digital literacy encompasses more than technical proficiency, incorporating critical, ethical, and communicative competencies that directly impact learning engagement and achievement (Hidayat et al., 2024; Putrayasa et al., 2024). Similarly, motivation to learn has long been recognized as a psychological driver that determines persistence, effort, and academic performance (Hasibuan & Nasution, 2024; Herawaty, 2023). In this context, the study sought to examine how these two internal factors interact to shape

students' learning outcomes in an era characterized by human–technology synergy.

The results revealed that digital literacy and learning motivation both have positive and significant effects on learning outcomes. Digital literacy not only influenced learning outcomes directly but also exerted an indirect effect through learning motivation. The model demonstrated a strong explanatory power, with digital literacy and learning motivation jointly accounting for 96% of the variance in learning outcomes, indicating a substantial contribution to academic performance. Furthermore, the F-square values confirmed the large magnitude of these relationships, suggesting that both factors play essential roles in predicting student success. These findings confirm that digital competence and intrinsic motivation act synergistically in promoting academic achievement in digital learning environments.

The findings are consistent with previous studies that reported the positive association between digital literacy and student competence (Hidayat et al., 2024; Ismuwardani et al., 2024) and between motivation and learning performance (Lingga et al., 2024; Qusnul et al., 2021). The strong relationship between digital literacy and learning motivation aligns with research demonstrating that digitally competent students tend to be more self-regulated and confident in managing their learning processes (Jayadi et al., 2025; Mulyati, 2023). Moreover, the results support studies emphasizing the importance of combining cognitive and affective dimensions in education, where motivation mediates the effectiveness of digital learning (Barus et al., 2023; Wahyu Purnomo & Herwin, 2020). However, this study extends prior work by confirming that digital literacy and motivation do not act independently but rather in an interrelated manner that enhances students' learning outcomes in higher education.

The strong positive effect of digital literacy on learning motivation and outcomes may be explained by the increasing integration of technology in learning processes that require students to actively engage with digital platforms. Students with high digital literacy can more efficiently access, evaluate, and utilize information, fostering a sense of autonomy and competence that, according to Self-Determination Theory, strengthens intrinsic motivation (Hasibuan & Nasution, 2024). These learners are also better able to navigate

collaborative and problem-solving environments, which are key competencies in the Society 5.0 framework (Puspa et al., 2023). Consequently, digital literacy not only improves technical engagement but also cultivates psychological readiness for continuous learning. This highlights how technology adoption in higher education can stimulate motivation when supported by sufficient digital competence.

Meanwhile, the strong influence of learning motivation on learning outcomes aligns with motivational frameworks such as the ARCS model (Attention, Relevance, Confidence, Satisfaction), which suggests that motivation enhances learning engagement and performance by fostering persistence and effort (Herawaty, 2023). In digital learning contexts, motivated students demonstrate higher adaptability and self-regulation, which are essential for achieving academic goals (Qusnul et al., 2021). This study reinforces the understanding that motivation functions as a psychological bridge linking digital engagement with tangible academic success. Therefore, enhancing motivation should remain a strategic priority in digital-based education to optimize student performance.

Interestingly, the moderate contribution of digital literacy to learning motivation suggests that while technology skills are important, they may not be sufficient without appropriate pedagogical support and cultural context. In Islamic higher education, students' motivation is also shaped by intrinsic religiosity and the ethical use of technology (Jannana et al., 2024; Puput Budiarti et al., 2022.). This nuance emphasizes that digital literacy in Islamic education must integrate moral dimensions, ensuring that technological engagement aligns with ethical and spiritual values. The findings therefore advocate for a balanced approach that combines technological proficiency with value-based education to maintain the human-centered ideals of Society 5.0 (Sarpong et al., 2023; Sukari & Nurachman, 2024).

From a broader perspective, these findings have significant implications for higher education management and curriculum development. Institutions must design learning strategies that not only build digital competencies but also strengthen intrinsic motivation through interactive, relevant, and value-oriented pedagogy. Developing training programs that enhance both digital and motivational skills could help create adaptive learners capable of thriving in

complex digital ecosystems. Additionally, educators should receive continuous professional development in digital pedagogy to ensure the effective integration of technology with student-centered learning approaches (Rofi, n.d.; Sucipto, 2024). In doing so, universities can advance toward realizing the goals of Society 5.0—integrating technological progress with human development.

In conclusion, this study confirms the synergistic relationship between digital literacy and learning motivation in shaping academic success within digital-based education. The results demonstrate that technological proficiency, when combined with psychological and ethical readiness, can significantly enhance student learning outcomes. These insights contribute theoretically by emphasizing the integrative nature of digital competence and motivation, and practically by informing educational institutions about strategies to foster these capabilities among students. As digital transformation continues to redefine higher education, the findings underscore the need to sustain a human-centered approach that values both innovation and moral integrity in learning.

CONCLUSION

Based on the research results show that there is a positive and significant influence between the digital literacy variable and student learning outcomes of 72% based on the t-test results of 6,966 > 1,660 Ha accepted, there is an influence between the learning motivation variable on learning outcomes of 81% based on the t-test results of 5,920 > 1,660 Ha accepted, and there is a positive and significant influence of digital literacy on learning motivation of 57% based on the t-test results of 18,160 > 1,660, simultaneously the influence of digital literacy, work motivation and learning outcomes is R Square 0.968 or 97%, and 3% is influenced by other variables that the researchers did not carefully examine.

In practical terms, higher education institutions are encouraged to design comprehensive programs that strengthen students' digital literacy while simultaneously fostering intrinsic and extrinsic motivation. This may include curriculum innovations, training in digital ethics, and the provision of supportive learning environments that cultivate autonomy, competence, and collaboration. Furthermore, future research is recommended to expand the scope of participants across multiple study programs and institutions, utilize a larger and more diverse sample, and incorporate broader indicators of academic achievement beyond GPA, such as skill development, research productivity, and

professional competencies. By addressing these areas, subsequent studies can offer a more holistic understanding of how digital literacy and learning motivation interact to shape sustainable academic success in the digital era..

REFERENCES

Abdillah, W., & Hartono, J. (2018). *Partial Least Square (PLS): Alternatif Structural Equation Modeling (SEM) dalam Penelitian Bisnis*. Andi.

Barus, R. A., Supriyadi, S., Ridlo, S., & Lestari, W. (2023). *Tantangan Perguruan Tinggi Dalam Menghadapi Era Society 5.0*. http://pps.unnes.ac.id/pps2/prodi/prosiding-pascasarjana-unnes

Cohen, A. (2010). Achieving healthy school siting and planning policies: Understanding shared concerns of environmental planners, public health professionals, and educators. *New Solutions*, *20*(1), 49–72. Scopus. https://doi.org/10.2190/NS.20.1.d

Ghozali, I. (2014). *Structural Equation Modeling: Metode Alternatif dengan Partial Least Squares (PLS)*. Badan Penerbit Universitas Diponegoro.

Hasibuan, K. N., & Nasution, T. (2024). *Pengaruh Motivasi Belajar dan Status Masuk Mahasiswa Terhadap Indeks Prestasi Kumulatif (IPK) Mahasiswa*. https://jurnaldidaktika.org

Herawaty, A. (2023). Penerapan Metode Pendrilan Dalam Upaya Meningkatkan Hasil Belajar Praktikum Akuntansi Perusahaan Jasa, Dagang Dan Manufaktur Pada Siswa Kelas XII AKL 3 SMKN 1 Dumai Tahun 2022. *Benefit: Journal of Bussiness, Economics, and Finance*, *1*(1), 25–36. https://doi.org/10.37985/benefit.v1i1.24

Hidayat, H., Ardi, Z., Ahlunnazak, A. I., Harmanto, D., Orji, C. T., & Isa, M. R. M. (2024). Determining the Influence of Digital Literacy on Learning Personal Competence: The Moderating Role of Fear of Missing Out. *Başlık*, *13*(4), 1775–1790. https://doi.org/10.12973/eu-jer.13.4.1775

Ismuwardani, Z., Dole, F. B., & Sholeha, H. H. (2024). Analisis Kemampuan Literasi Digital Mahasiswa Dalam Pembelajaran Daring Kolaboratif Pada Mata Kuliah Konsep Dasar IPS. *Prima Magistra: Jurnal Ilmiah Kependidikan*, *5*(2), 143–150. https://doi.org/10.37478/jpm.v5i2.3646

Jannana, N. S., Danuri, D., & Wardani, A. K. (2024). Harnessing Local Potential in Dusun Bengkung for STEAM Education: A Case Study Of Literacy Advancement at TBM Pelopor Literasi Dusunku. *MANAGERIA: Jurnal Manajemen Pendidikan Islam*, *9*(2), 177–194. https://doi.org/10.14421/manageria.2024.92-11

Jayadi, A., Firmansyah, D., Yusuf Arfizi, M., Amir Ali, M., & Supardi, S. (2025). The Influence of Digital Literacy on Motivation and Learning Achievement in Fiqh Among Students of MA Badrul Islam Gulung. *AS-SABIQUN*, *7*(1), 15–35. https://doi.org/10.36088/assabiqun.v7i1.5548

Lingga, R. A., Andriani, D. N., Wirawan, Y. R., & Permata, D. I. (2024). *The Influence of Digital Literacy and Learning Motivation on Learning Outcomes of Generation Z* (pp. 626–633). https://doi.org/10.2991/978-94-6463-554-6_51

Mulyati, S. (2023). Pengaruh Komptensi Literasi Digital Dan Self Regulated Learning Terhadap Motivasi Belajar Mahasiswa. *Jurnal Education And Development*, *11*(3), 210–216. https://doi.org/10.37081/ed.v11i3.5052

Muniarti, & Latan, H. (2013). *Analisis Multivariate dengan Partial Least Square (PLS)*. Badan Penerbit Universitas Diponegoro.

Puput Budiarti, O., Anum Siregar, D., & Author, C. (2022). *Pengaruh Pembelajaran Daring Terhadap Motivasi Belajar Siswa Kelas X SMA Negeri 1 Delitua TA 2020-2021*.

Puspa, C. I. S., Rahayu, D. N. O., & Parhan, M. (2023). Transformasi Pendidikan Abad 21 dalam Merealisasikan Sumber Daya Manusia Unggul Menuju Indonesia Emas 2045. *Jurnal Basicedu*, *7*(5), 3309–3321. https://doi.org/10.31004/basicedu.v7i5.5030

Putrayasa, I. M., Suwindia, I. G., & Ari Winangun, I. M. (2024). *Transformasi literasi di era digital: Tantangan dan peluang untuk generasi muda*. *5*(2), 156–165. https://doi.org/10.29210/07essr501400

Qusnul, A., Widayati, S., & Marliyah, L. (2021). Motivasi Belajar Siswa Melalui Media Pembelajaran Google Classroom pada Mata Pelajaran IPS Ekonomi Kelas XI. *Journal of Economic Education and Entrepreneurship*, *2*(2), 78. https://doi.org/10.31331/jeee.v2i2.1921

Sarpong, G., Bonsu, M. O. T., & Adu-Poku, A. (2023). Evaluating Digital Technology Access and Usage among Teachers. *MANAGERIA: Jurnal Manajemen Pendidikan Islam*, *8*(1), 21–38. https://doi.org/10.14421/manageria.2023.81-02

Sucipto. (2024). Tantangan Dan Peluang Implementasi Pembelajaran Berbasis Teknologi Di Era Digital. *Jurnal Ilmiah Pendidikan Citra Bakti*, *11*(3), 902–916. https://doi.org/10.38048/jipcb.v11i3.4192

Sukari, S., & Nurachman, A. (2024). Analisis Kritis Isu Kesetaraan Akses Pendidikan dalam Kompetisi Negara ASEAN (Studi Kasus di Indonesia, Malaysia dan Brunei Darussalam). *TSAQOFAH*, *5*(1), 214–227. https://doi.org/10.58578/tsaqofah.v5i1.4326

Syah, R., Darmawan, D., & Purnawan, A. (2019). Analisis Faktor yang Mempengaruhi Kemampuan Literasi Digital. *Jurnal AKRAB*.

Wahyu Purnomo, Y. & Herwin. (2020). *Educational Innovation in Society 5.0 Era: Challenges and Opportunities*.

Wahyuni, Y., Egilistiani, R., Kurniati, G., & Tisnawijaya, C. (n.d.). Pengayaan Literasi Digital di Era Pandemi: Fabel Sebagai Materi Pembentukan Karakter Peserta Didik di Madrasah Ibtidaiyah Jam'iyyatul Khair. *Jurnal Pengabdian Sosial*, *1*(1).

Yanti, N., Mulyati, Y., Sunendar, D., & Damaianti, V. (2021). Tingkat Literasi Digital Mahasiswa Indonesia. *Diksa: Pendidikan Bahasa Dan Sastra Indonesia*, *7*(1), 59–71. https://doi.org/10.33369/diksa.v7i1.22391