SEMPOA
Vol. 1, No. 1, (2026), pp. 14-23
ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

Digital Learning Transformation, Deep Learning Pedagogy, and Teacher Professionalism: Effects on Primary School Students' Motivation

Tutut Tursilaningsih[1], Imam Sukwatus Suja'i[2], Muhamad Abdul Roziq Asrori[3], Imam Sujono[4]

Faculty of Teacher Training and Education, University of Bhinneka PGRI, Tulungagung, Indonesia
tututtursilaningsih@gmail.com[1], doktorsujai@gmail.com[2], Roziq@ubhi.ac.id[3], imam.sujono@ymail.com[4]

Abstract. This study is motivated by the challenges of educational transformation in the digital era, where sixth-grade students' learning motivation often declines due to conventional teaching methods and academic pressure prior to graduation. In Cluster IV of Dongko District, the integration of educational digitalization, deep learning principles, and teacher professional competence is considered essential for creating a supportive learning ecosystem. This research aims to analyze the effects of learning digitalization, deep learning principles, and teachers' professional competence on students' learning motivation, both partially and simultaneously. A quantitative research design with an explanatory approach was employed. The population consisted of all sixth-grade students in elementary schools within Cluster IV of Dongko District, with a sample of 120 respondents selected through quota sampling. Data were collected using validated and reliable questionnaires. Data analysis techniques included classical assumption tests, multiple linear regression analysis, and hypothesis testing (t-test and F-test) using SPSS. The results indicate that learning digitalization has a positive and significant effect on learning motivation (t = 2.622). Deep learning principles emerged as the most dominant variable influencing learning motivation (t = 6.790). Teacher professional competence also showed a significant partial effect. Simultaneously, the three variables exert a strong and significant influence on students' learning motivation (F = 190.797; p = 0.000), demonstrating that the synergy between digital tools, deep learning pedagogy, and teacher competence is a key driver of student motivation.

Keywords: Learning Digitalization, Deep Learning Pedagogy, Teacher Professional Competence, Student Learning Motivation

1 Introduction

The rapid development of digital technology has transformed nearly all sectors of human life, including education, fundamentally reshaping teaching–learning processes at the primary school level. Digitalization in education has shifted learning from

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0)

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

traditional teacher-centered instruction toward more interactive, technology-supported learning environments that enhance accessibility, engagement, and instructional effectiveness (Suparmi et al., 2024); (Humaniora, 2024). In the digital era, the integration of digital tools into classroom instruction is no longer optional but a pedagogical necessity, especially in preparing students for the demands of a technologically driven society (Murdianti, 2024; Sutarsih & Haryati, 2024). Empirical studies indicate that digital learning media contribute significantly to increased student engagement, interactivity, and motivation, enabling more meaningful learning experiences through multimedia resources, educational platforms, and interactive applications (Rahman et al., 2024; Rusdi et al., 2025). However, the effectiveness of digitalization in education is highly dependent on the pedagogical competence of teachers and their ability to integrate technology into instructional design in a purposeful and educationally meaningful way (Nelga et al., 2022).

Alongside digital transformation, the implementation of deep learning pedagogy has emerged as a contemporary instructional approach aimed at fostering meaningful, reflective, and student-centered learning experiences. Deep learning in education emphasizes conceptual understanding, critical thinking, learner engagement, and knowledge integration rather than surface memorization (Amalia et al., 2025). This pedagogical approach is guided by three core principles: mindful, meaningful, and joyful learning, which collectively promote cognitive engagement, emotional well-being, and intrinsic motivation among learners (Arif et al., 2025). Research suggests that deep learning-oriented instruction enhances students' motivation by creating positive learning environments characterized by active participation, creativity, and psychological safety (Ainan et al., 2024; Sutopo et al., 2025). The integration of digital technologies within deep learning pedagogy further strengthens its impact, as digital tools support interactive learning designs, collaborative learning processes, and personalized learning experiences that align with the principles of meaningful and joyful learning (Sutarsih & Haryati, 2024; Amalia et al., 2025).

Nevertheless, the successful implementation of both learning digitalization and deep learning pedagogy is inseparable from teachers' professional competence, which plays a central role in shaping instructional quality and student motivation. Professional teachers are not only subject-matter experts but also pedagogical designers, facilitators, and learning innovators who continuously adapt to educational change (Hanifuddin Jamin, 2018; Kinanthi et al., 2024). Studies indicate that teacher professionalism significantly influences the effectiveness of digital learning environments and students' motivational outcomes (Murdianti, 2024; Sulastriningsih et al., 2025). Despite policy support and technological advancement, empirical evidence reveals persistent gaps between educational expectations and classroom realities, particularly in rural and resource-limited contexts where digital infrastructure, teacher training, and pedagogical innovation remain unevenly distributed (Rahman et al., 2024; Rusdi et al., 2025). Therefore, examining the integrated effects of learning digitalization, deep learning pedagogy, and teachers' professional competence on students' learning motivation becomes crucial, especially in primary education settings. This study addresses this gap by investigating their combined influence on sixth-grade students' learning motivation in elementary schools within Cluster IV, Dongko District.

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

2 Method

This study employed a quantitative explanatory research design, which aims to examine causal relationships between independent and dependent variables through statistical testing. Quantitative research is characterized by empirical, objective, measurable, and systematic procedures using numerical data to test hypotheses and validate theoretical assumptions (Sugiyono, 2019; Muin, 2023; Akbar et al., 2023). The explanatory approach was selected to analyze both the partial and simultaneous effects of learning digitalization, deep learning principles, and teachers' professional competence on students' learning motivation (Sari et al., 2023). The research variables consisted of three independent variables—learning digitalization (X1), deep learning principles (X2), and teacher professional competence (X3)—and one dependent variable, student learning motivation (Y). This design enabled the study to identify causal patterns, measure the strength of relationships among variables, and produce statistically generalizable findings within the studied population (Sugiyono, 2019; Balaka, 2022).

The population of this study comprised 171 sixth-grade students from 11 elementary schools in Cluster IV, Dongko District, Trenggalek Regency. The sample size was determined using the Slovin formula with a 5% margin of error, resulting in a sample of 120 respondents, which meets statistical representativeness requirements for quantitative analysis (Sugiyono, 2019). A quota sampling technique was applied to ensure proportional representation across schools while considering variations in digital learning infrastructure and accessibility (Susanti, 2005; Muin, 2023). Data were collected using a structured closed-ended questionnaire developed based on established theoretical indicators of each variable, including digital access, flexibility, and learning experience (Patmasari et al., 2023); interactive learning environments, inspirational activities, and motivating challenges (Amalia et al., 2025); subject mastery, creative material development, and ICT utilization (Raiz, 2022); and internal drive, achievement orientation, and future aspirations (Sari et al., 2023). Instrument validity was tested using Product Moment correlation, while reliability was assessed using Cronbach's Alpha, ensuring that all instruments met accepted psychometric standards (Sugiyono, 2019).

Data analysis was conducted using multiple linear regression to evaluate both partial (t-test) and simultaneous (F-test) effects of the independent variables on learning motivation (Sugiyono, 2019; Mardiatmoko, 2020). Prior to hypothesis testing, classical assumption tests were performed, including normality testing (Kolmogorov–Smirnov and Normal P–P Plot), multicollinearity testing (Tolerance and Variance Inflation Factor), and heteroskedasticity testing (Glejser test), to ensure model validity and statistical robustness (Mardiatmoko, 2020). The regression model was specified as $Y=\alpha+b1X1+b2X2+b3X3+eY = \alpha + b_1X_1 + b_2X_2 + b_3X_3 + eY=\alpha+b1X1+b2X2+b3X3+e$, allowing for the estimation of individual and collective contributions of each predictor variable. The coefficient of determination (R^2) was used to measure the proportion of variance in learning motivation explained by the independent variables (Riduwan, 2012). All statistical analyses were conducted using SPSS software, ensuring accuracy, reliability, and reproducibility of results.

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

3 Results And Discussion

3.1 Result

The results of this study demonstrate that digitalization of learning, the implementation of deep learning principles, and teachers' professional competence significantly influence students' learning motivation, both individually and simultaneously.

Descriptive analysis indicates that the level of digitalization of learning (X1) among Grade 6 students in Gugus IV Kecamatan Dongko is predominantly in the *good* and *very good* categories, with more than 90% of students experiencing effective access to digital learning tools. This reflects a relatively mature stage of technology integration in classroom practices, characterized by flexible learning processes, independent learning opportunities, and consistent digital learning experiences. These findings confirm that the distribution of digital infrastructure and learning devices has moved beyond mere availability and has begun to function pedagogically in daily learning activities.

The principles of deep learning (X2) show the strongest descriptive performance among all independent variables, with the majority of students (over 65%) perceiving learning activities as *very effective*. This indicates that learning environments are increasingly interactive, inquiry-based, and cognitively challenging, promoting curiosity, critical thinking, and meaningful engagement. The learning process has thus shifted from surface-level memorization toward concept understanding, reflective thinking, and problem-solving orientation.

Similarly, teachers' professional competence (X3) is dominantly categorized as *competent* and *very competent*. This suggests that teachers demonstrate strong mastery of subject matter, pedagogical innovation, instructional creativity, and effective use of digital technologies. The data indicate that professional competence is not limited to content knowledge but also includes adaptive teaching strategies and digital pedagogical literacy.

For the dependent variable, students' learning motivation (Y) is overwhelmingly in the *very high* category (70%), indicating strong intrinsic and extrinsic motivation, high achievement orientation, clear future aspirations, and strong internal learning drive. This reflects a learning environment that successfully fosters psychological engagement, self-regulation, and goal-directed learning behavior.

Inferential statistical analysis further strengthens these findings. The t-test results show that:

a. Digitalization of learning (X1) has a positive and significant effect on learning motivation ($t = 2.622$, $p < 0.05$),
b. Deep learning principles (X2) have a very strong positive and significant effect ($t = 6.790$, $p < 0.05$),
c. Teachers' professional competence (X3) also has a strong positive and significant effect ($t = 5.316$, $p < 0.05$).

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

Table 1. t-Test Results (Partial Regression Analysis)

Model	Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.	Tolerance	VIF
1	(Constant)	0.136	1.852	–	0.073	0.942	–	–
	Digitalization of Learning	0.145	0.055	0.158	2.622	0.000	0.400	2.497
	Deep Learning	0.498	0.073	0.474	6.790	0.000	0.297	3.362
	Teachers' Professional Competence	0.392	0.074	0.351	5.316	0.000	0.3	

The F-test confirms hat all three variables simultaneously have a significant effect on learning motivation ($F = 190.797$, $p < 0.05$), indicating a highly robust regression model. The coefficient of determination ($R^2 = 0.831$) shows that 83% of the variance in students' learning motivation is explained by the combined influence of digitalization of learning, deep learning principles, and teachers' professional competence. This indicates a very high explanatory power of the model, while only 17% of the variance is influenced by other external factors such as self-efficacy, learning environment, family background, learning facilities, and individual student characteristics.

Table 2. F-Test Results (ANOVA for Multiple Regression Model)

Model	Source	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1753.199	3	584.400	190.797	0.000
	Residual	355.301	116	3.063	–	–
	Total	2108.500	119	–	–	–

Table 3. Model Summary (Coefficient of Determination Test)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.912	0.831	0.827	1.75013

The multiple regression equation $Y = 0.136 + 0.145X1 + 0.498X2 + 0.392X3 + e$ shows that deep learning principles (X2) contribute the largest standardized effect, followed by teachers' professional competence (X3), and digitalization of learning (X1), confirming that pedagogical quality and cognitive learning design play a more dominant role than technology alone.

Table 4. Multiple Linear Regression Analysis Results

Model	Variable	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients	t	Sig.	Tolerance	VIF

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

				(Beta)				
1	(Constant)	0.136	1.852	–	0.073	0.942	–	–
	Digitalization of Learning	0.145	0.055	0.158	2.622	0.000	0.400	2.497
	Deep Learning	0.498	0.073	0.474	6.790	0.000	0.297	3.362
	Teachers' Professional Competence	0.392	0.074	0.351	5.316	0.000	0.3	

3.2 Discussion

Effect of Learning Digitalization on Student Motivation. The regression analysis confirms that learning digitalization has a positive and significant effect on student learning motivation ($t = 2.622$; $p < 0.05$). This finding empirically supports digital learning theory, which argues that technology-mediated instruction enhances learner engagement, autonomy, and interest through interactive content and flexible access to learning resources (Rahman et al., 2024; Rusdi et al., 2025). Digital platforms such as interactive media, learning applications, and multimedia resources transform traditional teacher-centered instruction into learner-centered environments. This transformation increases students' intrinsic motivation by fostering enjoyment, curiosity, and learning relevance (Murdianti, 2024; Nelga et al., 2022). The results demonstrate that digitalization functions not merely as a technical tool but as a pedagogical catalyst for motivational change.

Effect of Deep Learning Principles on Student Motivation. Deep learning principles emerge as the most dominant predictor of learning motivation ($t = 6.790$; $\beta = 0.474$), indicating a very strong influence. This finding is theoretically consistent with constructivist learning theory, which emphasizes meaning-making, active engagement, and emotional involvement in learning (Amalia et al., 2025; Arif et al., 2025). Mindful learning fosters awareness and reflection, meaningful learning promotes cognitive integration, and joyful learning creates emotional attachment to learning activities. These components collectively strengthen intrinsic motivation and learning persistence. Empirical studies support this relationship by showing that deep learning environments enhance curiosity, critical thinking, and learner autonomy (Sutopo et al., 2025; Sutarsih & Haryati, 2024). Thus, deep learning operates as a psychological and pedagogical driver of sustainable learning motivation.

Effect of Teacher Professional Competence on Student Motivation. Teacher professional competence shows a significant positive effect on student motivation ($t = 5.316$; $p < 0.05$), confirming that teacher quality remains a central determinant of learning effectiveness. Professional competence enables teachers to design meaningful instruction, integrate technology pedagogically, and manage learning environments effectively (Hanifuddin Jamin, 2018; Kinanthi et al., 2024). Teachers function

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

as facilitators, motivators, and learning architects rather than mere content transmitters (Sulastriningsih et al., 2025). This aligns with motivational learning theory, which emphasizes the role of teacher–student interaction in shaping learning attitudes and engagement (Ningrat et al., 2018). The findings indicate that professional competence mediates the effectiveness of both digitalization and deep learning implementation.

Simultaneous Effect of All Variables. The F-test results demonstrate that learning digitalization, deep learning principles, and teacher professional competence simultaneously exert a very strong influence on learning motivation ($F = 190.797$; $p < 0.001$), with a coefficient of determination (R^2) of 0.831. This means that 83% of the variance in student motivation **is** explained by the combined model. This confirms a synergistic model of motivation**,** where technological infrastructure (digitalization), pedagogical depth (deep learning), and human capital (teacher competence) operate as an integrated system. This systemic interaction supports ecological learning theory, which views learning motivation as the product of multiple interacting educational subsystems (Rusdi et al., 2025; Rahman et al., 2024). The findings establish that motivation is not driven by a single factor but by structural integration across pedagogy, technology, and professionalism.

4 Conclusion

a. This study concludes that digitalization of learning, the application of deep learning principles, and teachers' professional competence significantly influence students' learning motivation, both individually and collectively, among Grade 6 students in Gugus IV Kecamatan Dongko, Trenggalek Regency.
b. First**,** digitalization of learning has been empirically proven to exert a positive and significant effect on students' learning motivation. The integration of digital platforms and learning media transforms students' perceptions of learning into more engaging, interactive, and enjoyable experiences, thereby increasing their enthusiasm and participation in classroom activities. Digital technology in this context functions not merely as instructional support, but as a motivational driver that reshapes learning dynamics toward flexibility, autonomy, and active engagement.
c. Second, the principles of deep learning demonstrate the strongest and most dominant influence on learning motivation. The shift from rote memorization toward meaningful understanding, critical thinking, and reflective learning significantly strengthens students' intrinsic motivation. Learning environments that emphasize inquiry, cognitive challenge, and relevance foster deeper psychological engagement and sustained learning interest, confirming that pedagogical quality is a core determinant of motivational development.
d. Third, teachers' professional competence significantly contributes to students' learning motivation. Teachers who demonstrate strong pedagogical mastery, classroom management skills, adaptive instructional strategies, and digital pedagogical literacy are able to function as effective learning facilitators. Their pro-

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

fessional capacity bridges students' learning needs with curriculum objectives, creating a supportive and motivating learning environment.

e. Simultaneously, the combined influence of digitalization of learning, deep learning principles, and teachers' professional competence exerts a very strong and significant effect on students' learning motivation. The high explanatory power of the model indicates that students' motivation is shaped by the synergistic interaction between technology, pedagogy, and teacher professionalism**,** rather than by isolated factors. This confirms that sustainable learning motivation emerges from an integrated educational ecosystem where digital infrastructure, meaningful learning design, and professional teaching capacity operate cohesively.

DECLARATIONS

Author Contributions

All authors have read and approved the final version of the manuscript.

Funding

The authors received no specific funding for this research.

Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Artificial Intelligence (AI) Disclosure

[To be confirmed by the authors] The authors declare that no generative AI or AI-assisted technologies were used in the preparation of this manuscript.

Research Ethics

Ethical review and approval were not required for this study because [brief justification].

Informed Consent Statement

Informed consent was obtained from all participants involved in the study, and from the parents or guardians of the participating students.

Acknowledgments

All praise and gratitude are due to Almighty God, by whose grace and blessing this thesis entitled "The Influence of Learning Digitalization, Deep Learning Principles,

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

and Teachers' Professional Competence on the Learning Motivation of Grade 6 Students in Gugus IV Kecamatan Dongko" has been successfully completed.

With sincere humility, the author would like to express heartfelt appreciation and gratitude to:

a. The thesis supervisors and examiners, for their invaluable guidance, academic direction, and constructive evaluation throughout the completion of this thesis.
b. The author's beloved family, for the opportunity, continuous support, prayers, and both moral and material assistance.
c. The school principals of Gugus IV Kecamatan Dongko, for granting permission and support for the implementation of this research.
d. Grade 6 teachers and students in Gugus IV Kecamatan Dongko, for their cooperation and valuable contributions of information related to this study.
e. Colleagues at SD Negeri 1 Siki, for their significant assistance and support in completing this research.
f. The author's beloved younger sibling, who consistently shared the struggle, support, and perseverance throughout this academic journey.

References

Ainan Safiinatunnajah, Faiza Azka Salsabila, Khaula Maritza Sulaeman, & Rafa Anindita Az Zahra. (2024). Analisis Fasilitas Penunjang Pembelajaran Di Sekolah Dalam Menghadapi Tantangan Era Digital. *Morfologi : Jurnal Ilmu Pendidikan, Bahasa, Sastra Dan Budaya*, *2*(3), 133–141. https://doi.org/10.61132/morfologi.v2i3.625

Akbar, R., Sukmawati, U. S., & Katsirin, K. (2023). *Analisis Data Penelitian Kuantitatif (Pengujian Hipotesis Asosiatif Korelasi)*. *1*(3). https://doi.org/10.59996/jurnalpelitanusantara.v1i3.350

Amalia, S., Ginting, F. B., Amanda, M. D., & Mahdi, M. H. (2025). Pengaruh Pembelajaran Deep Learning Terhadap Motivasi Belajar Siswa Kelas 1 SDS Muhammadiyah 01 Binjai. *JUMI: Jurnal Multidisiplin Ilmu*, *1*(1), 103–113. https://jurnal.insan.ac.id/index.php/jpai/index

Arif, Nur, M., Parawansyah, Isya, M., Huda, Haikal, F., & Zulfahmi, Nofan, M. (2025). Strategies to develop students' learning interest through a deep learning approach. *Jurnal Muassis Pendidikan Dasar*, *4*(1), 8–16.

Balaka, M. Y. (2022). *METODOLOGI PENELITIAN KUANTITATIF*. https://repository.penerbitwidina.com/media/publications/464453-metodologi-penelitian-kuantitatif-10d6b58a.pdf

Hanifuddin Jamin. (2018). Upaya Meningkatkan Kompetensi Profesional guru. *Jurnal Ilmiah Pendidikan Agama Islam*, *10*(1), 19–36.

Herlina Rusdi, Rifadhilla Ervianti, Adrias Adrias, A. P. Z. (2025). *PENGARUH MEDIA PEMBELAJARAN DIGITAL TERHADAP MOTIVASI BELAJAR SISWA SEKOLAH DASAR Herlina*. *10*.

Humaniora, J. (2024). *Pengaruh+Digitalisasi+Pembelajaran,+Kompetensi+Profesional+Dan+Komitmen+Kerja +Dimoderasi+Oleh+Budaya+Organisasi+Terhadap+Prestasi+Siswa+(Studi+Empiris+Pada+Smp+Negeri+Di+Kota+Makassar)*. *1*(1).

License: CC BY 4.0

ISSN: 3165-1798
https://doi.org/10.58905/sempoa.v1i1.577

Kinanthi, G. S., Saputri, N. F., & Rosita, N. A. (2024). Pentingnya Pengembangan Kompetensi Profesionalisme Guru dalam Menghadapi Transformasi Pendidikan Abad 21. *Social, Humanities, and Educational Studies (SHES): Conference Series*, *7*(3), 729–738. https://doi.org/10.20961/shes.v7i3.91652

Mardiatmoko, G. (2020). *PENTINGNYA UJI ASUMSI KLASIK PADA ANALISIS REGRESI LINIER BERGANDA (STUDI KASUS PENYUSUNAN PERSAMAAN ALLOMETRIK KENARI MUDA [CANARIUM INDICUM L .])*. *14*(3), 333–342.

Muin, A. (2023). *Buku Ajar METODE PENELITIAN KUANTITATIF*.

Murdianti, W. (2024). Inovasi media pembelajaran digital untuk meningkatkan minat belajar di era digital. *Of Social Science Research*, *4*, 13200–13212. https://j-innovative.org/index.php/Innovative%0AInovasi

Nelga, I. C., Rina, R., & Jamin, H. (2022). Urgensi Digitalisasi Pendidikan Sekolah. *At-Ta'dib: Jurnal Ilmiah Prodi Pendidikan Agama Islam*, *14*(2), 129–141.

Patmasari, L., Hidayati, D., Ndari, W., & Sardi, C. (2023). Digitalisasi Pembelajaran Yang Berpusat Pada Siswa Di Smk Pusat Keunggulan. *Jurnal Ilmiah Mandala Education*, *9*(1), 1–7. https://doi.org/10.58258/jime.v9i1.3729

Rahman, I., Nurhadifah Amaliyah, Anni Mafruha Amaliyah, Musdalifa, & Dinda Claudia Risal Denggo. (2024). Pengaruh Media Pembelajaran Digital Terhadap Motivasi Belajar Siswa: Kajian Studi Literatur. *Jurnal Pendidikan Dasar Islam*, *2*(2), 77–86. https://doi.org/10.58540/jurpendis.v2i2.818

Raiz, M. A. (2022). *4 Standar Kompetensi Guru yang Harus Pengajar Miliki*. https://www.ruangguru.com/blog/apa-saja-standar-kompetensi-guru-yang-harus-dimiliki#:~:text=4 Standar Kompetensi Guru yang Harus Pengajar Miliki

Sari, M., Rachman, H., Astuti, N. J., Afgani, M. W., & Abdullah, R. (2023). *Jurnal Pendidikan Sains dan Komputer Explanatory Survey dalam Metode Penelitian Deskriptif Kuantitatif Jurnal Pendidikan Sains dan Komputer*. *3*(1), 10–16.

Suparmi, S., Sumarno, A., Karwanto, K., Khamidi, A., & Haroyati, N. (2024). Pengaruh Digitalisasi dan Gaya Belajar terhadap Hasil Belajar Siswa SMP Kabupaten Magetan. *Journal of Education Research*, *5*(2), 2396–2402. https://doi.org/10.37985/jer.v5i2.1063

Susanti, O. R. (2005). *SAMPLING DALAM PENELITIAN PENDIDIKAN*. *16*, 187–208.

Sutarsih, W., & Haryati, T. (2024). *PERAN DIGITALISASI SEKOLAH TERHADAP MUTU PENDIDIKAN WIJI SUTARSIH & TITIK HARYATI Program Studi Manajemen Pendidikan Pascasarjana, Universitas PGRI Semarang e-mail: 4*(2), 288–295.

License: CC BY 4.0