

A Holistic Strategy to Improve Teacher Engagement through Trust, Knowledge Management, and Organizational Culture in Private Vocational Schools in Bogor Regency

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ABSTRACT

Objective: This study aims to analyze the role of trust, knowledge management, and organizational culture as an integrated (holistic) strategy to enhance teacher engagement in private vocational schools in Bogor Regency. It seeks to identify how these three elements interact to create a collaborative, innovative, and motivating educational environment that supports teacher performance and student learning outcomes. **Methods:** The research employed a quantitative approach using Path Analysis combined with the SITOREM (Scientific Identification Theory to Conduct Operation Research in Education Management) method to evaluate direct and indirect causal relationships among variables. Data were collected from 215 teacher respondents across several sub-districts in Bogor Regency. The analysis modeled relationships between visionary leadership, self-efficacy, achievement motivation, ICT literacy, and innovation, while SITOREM was used to determine priority indicators for improvement. **Results:** Findings revealed that visionary leadership ($\beta=0.169$), self-efficacy ($\beta=0.323$), achievement motivation ($\beta=0.139$), and ICT literacy ($\beta=0.385$) significantly influence teacher innovation ($p < 0.05$). The R^2 value of 0.229 indicates that these variables explain 22.9% of the variance in innovation. SITOREM analysis identified critical indicators to strengthen teacher innovation, including the application of new ideas, communication of school vision, and enhancement of technological literacy. **Novelty:** This research offers an innovative integration of Path Analysis and SITOREM in the educational management context, providing a comprehensive model for improving teacher engagement through a holistic interplay of trust, knowledge management, and organizational culture. The combination of statistical and systemic approaches establishes a new evaluative framework for vocational school development and teacher empowerment.

INTRODUCTION

Vocational education in Indonesia, particularly at the vocational high school (SMK) level, plays a strategic role in producing competent workers who are ready to compete in the industrial world. The success of vocational education heavily depends on the active role and involvement of teachers in the teaching and learning processes. In this context, increasing teacher involvement is crucial for improving the quality of education and producing graduates with skills aligned with the job market's needs. One approach to enhancing teacher involvement is through the implementation of a holistic strategy encompassing three key elements: trust, knowledge management, and organizational culture. The success of vocational schools depends heavily on the quality of teaching provided by their teachers. Therefore, teacher involvement in the educational process is

a key factor in achieving this goal. One way to increase teacher involvement is through the implementation of a holistic strategy that encompasses three main elements: trust, knowledge management, and organizational culture.

Trust between teachers, school management, and colleagues is a crucial element in creating positive and productive relationships in the school environment. This trust is formed when teachers feel valued, heard, and empowered during the decision-making process. This is reflected in the supportive relationships between the principal, fellow teachers, and other teaching staff. When teachers feel trusted, they are more motivated to contribute to learning activities. This is in line with Zirho and Setiawan's (2024) opinion, who state that trust plays a major role in increasing teacher involvement in the organization. This trust creates an open environment that allows teachers to share ideas and innovations in the learning process. Mayer, Davis, & Schoorman, (2018) Trust is built through integrity, competence, and goodwill between the parties involved. In the context of education, trust between teachers and school management is essential for creating a collaborative and open work culture. Related Research Zirho and Setiawan (2024) confirm that organizational trust plays an important role in increasing teacher engagement because it provides a sense of security and autonomy in their work.

Furthermore, knowledge management is equally important in increasing teacher engagement. In the context of education, knowledge management can be viewed as the process of collecting, storing, and distributing the knowledge and skills possessed by teachers. As explained by Awan (2024), good knowledge management improves teacher performance and facilitates the exchange of useful information in teaching. This knowledge can take the form of more effective teaching techniques, innovative learning methods, or the latest developments in the industry relevant to vocational education. When a knowledge management system is implemented properly, teachers will have easy access to information that can support their teaching, thereby improving the overall quality of learning. Choi and Lee (2020) argue that in a knowledge ecosystem, interactions between individuals, technology, and organizational culture are very important. Therefore, organizations must develop flexible knowledge management systems that utilize digital technology and cloud-based platforms to share and distribute knowledge. Zahay and Peltier (2021) developed a theory that emphasizes the importance of digital technology in knowledge management. They identified various technological tools that can be used to support the collection, storage, and distribution of knowledge within organizations. Wang and Ahmed (2022) found that to create innovation, organizations must be able to integrate explicit and tacit knowledge through open communication and team-based collaboration.

In addition, the organizational culture of schools greatly influences the level of teacher engagement. A positive organizational culture creates an atmosphere conducive to teacher development and innovation. Hasibuan (2024) argues that a supportive organizational culture encourages teachers to participate more actively in professional activities and strengthens their sense of responsibility for the school's progress. Schools with a collaborative culture that prioritizes cooperation between individuals and units will be better able to create an environment that encourages teachers to continue to develop and contribute their best. Furthermore, Ningsih's (2024) research shows that a positive organizational culture can also increase teacher job satisfaction, which, in turn, increases their involvement in school activities. Denison (2020) adds that a culture oriented toward collaboration and innovation can improve the performance and

engagement of organizational members. Ningsih (2024) An inclusive and supportive organizational culture can increase teacher job satisfaction, which ultimately increases their involvement in school activities. Schaufeli (2021) stated that teachers who feel emotionally and cognitively involved in their work will be more enthusiastic and contribute more to improving the quality of education.

These three elements–trust, knowledge management, and organizational culture–are interrelated and form a holistic strategy that can strengthen teacher engagement. Integrating these three elements will create a more inclusive work environment that supports collaboration and provides space for teachers' self-development. Cabrera Nuñez et al. (2025) state that organizations that adopt this holistic approach can optimize the performance of all members, including teachers, through increased engagement and empowerment in the educational process.

At the Private Vocational School in Bogor Regency, this holistic strategy can be a highly relevant solution for increasing teacher engagement. Given the challenges faced by private schools in creating quality education, the implementation of this strategy is expected to have a significant and positive impact. By building strong trust between school management and teachers, managing knowledge effectively, and developing a supportive organizational culture, schools can create an environment that motivates teachers to become more involved in every aspect of education. As a result, the quality of learning at the school will improve, which, in turn, will produce graduates who are ready to compete in the industrial world.

Through the implementation of a holistic strategy that integrates trust, knowledge management, and organizational culture, a more effective and higher-quality education system can be created in private vocational schools in Bogor Regency. Increased teacher involvement will not only benefit the teachers themselves, but also students, the community, and the industrial world, which requires a skilled and competent workforce.

RESEARCH METHOD

Research that combines Path Analysis and SITOREM Analysis (Integrated Information System for Community Rehabilitation Optimization) can provide a more comprehensive understanding of the relationships between variables and the processes occurring within a social phenomenon, particularly in the context of community rehabilitation. This approach is highly relevant in the fields of social sciences and public health, where the relationships between various factors influencing the success of a program are often complex and multidimensional. Path analysis is a statistical method used to explore the causal relationships between variables in a model. In social research, this analysis is important because it allows researchers to describe how one variable can influence another through clearly defined paths. Sümer (2018) in his study on Path Analysis and Structural Equation Modeling explains that path analysis enables researchers to identify both direct and indirect relationships between the variables involved. This is particularly useful for designing models that describe relationships involving more than two variables in complex social research. Additionally, Snyder and Frank (2020) emphasized that path analysis is a highly beneficial tool for testing hypotheses about the relationships between variables. They explain that path analysis not only describes relationships between variables but also identifies which variables have the greatest influence on desired outcomes, which is important in social research aimed at evidence-based policy-making. In this context, the use of path analysis is highly

beneficial in designing policies focused on the factors most influential to community rehabilitation outcomes. Kline (2021) in his book on structural equations also reveals that path analysis is very important in describing mediation effects, namely how one variable can influence another through an intermediary pathway. A deeper understanding of these cause-and-effect relationships allows researchers to describe more accurately the mechanisms that influence social outcomes and provides a strong foundation for designing more effective interventions.

In contrast, SITOREM is a system used to integrate data related to community rehabilitation programs, such as health, social, economic, and environmental data. This system is important for providing a more comprehensive picture of the conditions of communities in need of rehabilitation and for helping to design more targeted policies. Barker et al. (2019) in their research on the use of integrated information systems for social rehabilitation revealed that with SITOREM, data from various sectors can be integrated to provide more accurate and comprehensive information. This enables better, evidence-based decision-making.

Furthermore, Scholten and Garcia (2020) revealed that data integration through SITOREM can accelerate decision-making and design more efficient rehabilitation programs. They demonstrated that integrating data from various sectors, such as health, education, and the economy, enables policymakers to design interventions that are more aligned with local needs. This is crucial to ensure that rehabilitation programs run effectively and have the maximum impact on communities in need. Furthermore, Roberts et al. (2021) added that the use of integrated information systems, such as SITOREM, enables better monitoring of the outcomes of rehabilitation programs. With systematically collected data, policymakers can identify issues more quickly and adjust programs to achieve optimal results.

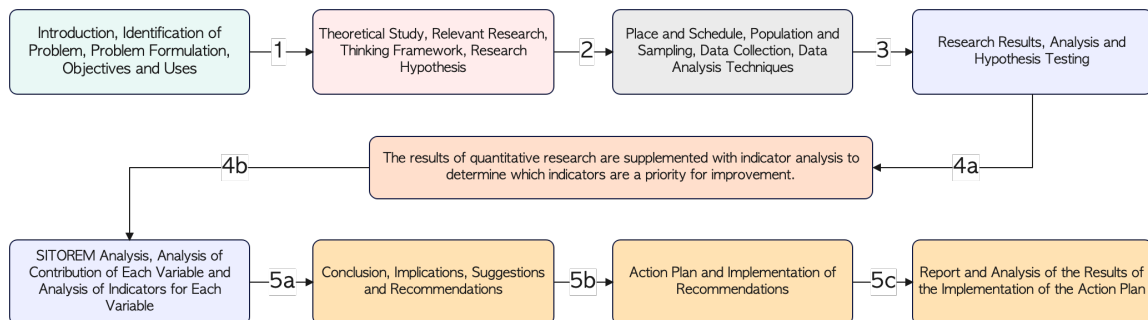


Figure 1. Research Flow

Combining Path Analysis with SITOREM in social research allows researchers to gain a deeper understanding of cause-and-effect relationships in integrated data. Davis and Parker (2018) revealed that combining these two approaches can provide significant advantages in designing more effective rehabilitation programs. Path analysis enables researchers to describe direct and indirect relationships between variables, whereas SITOREM provides an integrated data platform to ensure that policies are based on accurate and up-to-date information. Jones et al. (2020) emphasized that the integration of these two approaches enriches the evaluation of rehabilitation programs. By analyzing integrated data through SITOREM and illustrating cause-and-effect relationships through path analysis, researchers can identify the variables most influential to rehabilitation outcomes and design policies that are more responsive to community

needs. This integration enables researchers to evaluate policies more deeply and evidence-based, thereby making the programs designed more effective. Anderson (2021) argues that the combination of path analysis and SITOREM enables a more comprehensive and data-driven evaluation of the success of a rehabilitation program. With integrated data and a deeper understanding of the relationships between variables, decision-making can be performed more accurately, increasing the likelihood of success of community rehabilitation programs.

Path analysis is a technique for analyzing cause-and-effect relationships that occur in each variable studied, either directly or indirectly (Setyaningsih, 2020). Another definition states that path analysis is an analytical technique used to analyze inherent cause-and-effect relationships between variables arranged in a temporal sequence, using path coefficients as measures to determine the magnitude of the influence of independent variables on the dependent variables.

The constellation of influences between variables in this study was constructed from existing theory, namely according to Colquitt [113], which includes the influence of visionary leadership (X1) on teacher engagement (Y), the influence of organizational culture (X2) on teacher engagement (Y), the influence of knowledge management (X3) on teacher engagement (Y), the influence of achievement motivation (X4) on teacher engagement (Y), the influence of the trust variable (X5) on teacher engagement (Y), the influence of visionary leadership (X1) on achievement motivation (X4), the influence of organizational culture (X2) on achievement motivation (X4), the influence of organizational culture (X2) on trust (X5), and the influence of the knowledge management variable (X3) on trust (X5).

Based on the sample calculation technique, the sample size was set to 215 respondents. The sample size for each sub-district that became the sample area was determined by calculating the proportion according to the number of teachers.

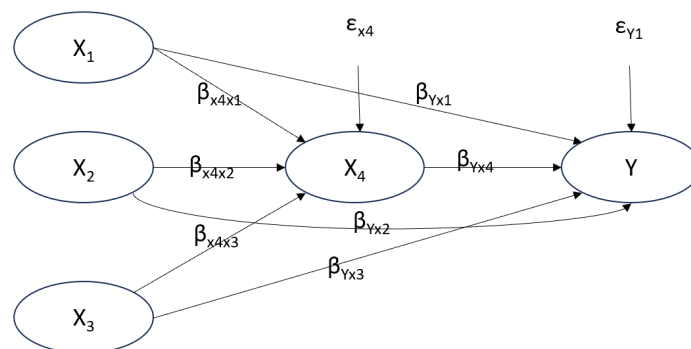


Figure 2. Constellation of Relationships between Variables

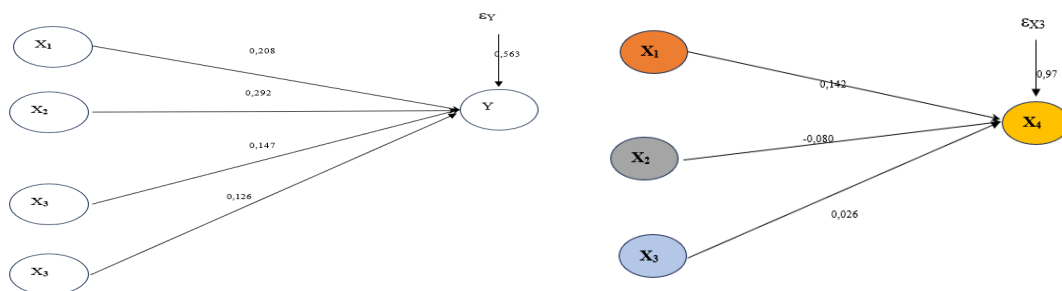


Figure 3. Structural model 1 and Structural model 2

RESULTS AND DISCUSSION

Results

A. Model of Inter-Variable Relationships in Substructure-1

The model of relationships between variables in substructure-1 consists of one endogenous variable, namely Innovation (Y), and four exogenous variables, namely Visionary Leadership (X1), Self-Efficacy (X2), Achievement Motivation (X3), and ICT Literacy (X4), as well as one residual variable, namely ε .

Table 1. Regression Coefficient Test Results

Model	Unstandardized Coefficients		Standardized Coefficients (Beta)	t	Sig.
	(B)	Std. Error			
(Constant)	27.064	9.647	—	2.805	0.005
Visionary Leadership	0.169	0.049	0.208	3.427	0.001
Self-Efficacy	0.323	0.079	0.292	4.095	0.000
Motivation to Excel.	0.139	0.070	0.147	1.999	0.047
ICT Literacy	0.385	0.169	0.126	2.285	0.023

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.563 ^a	0.317	0.305	10.282

Based on the table above, it can be shown that the path model yields the following equation: $\hat{y} = 0.169x_1 + 0.323x_2 + 0.139x_3 + 0.385x_4 + \varepsilon y$. The results of the calculations from the table show that the path coefficients in substructure-1 are as follows: the path coefficient of X1 to Y is $\beta_{y1} = 0.169$, the path coefficient of X2 to Y is $\beta_{y2} = 0.323$, the path coefficient of X3 to Y is $\beta_{y3} = 0.139$, and the path coefficient of X4 to Y is $\beta_{y4} = 0.385$. Each sig value was < 0.05 , so H_0 was rejected, meaning it was significant.

B. Model of Inter-Variable Relationships in Substructure-2

The relationship model between variables in substructure-2 consists of one endogenous variable, namely, ICT Literacy (X4), and three exogenous variables, namely Visionary Leadership (X1), Self-Efficacy (X2), and Achievement Motivation (X3), as well as one residual variable, namely ε_4 . Based on this relationship, the path model in substructure-2 is as follows:

$$X_4 = \beta_{41}x_1 + \beta_{42}x_2 + \beta_{43}x_3 + \varepsilon y$$

$$X_4 = 0.038x_1 - 0.029x_2 + 0.054x_3 + \varepsilon y$$

Table 3. Hasil Uji Koefisien Regresi Pengaruh Kepemimpinan Visioner, Efikasi Diri, dan Motivasi Berprestasi terhadap Literasi TIK

		Coefficients ^a		t	Sig.
		Unstandardized Coefficients	Standardized Coefficients		
Model		B	Std. Error	Beta	
1	(Constant)	16.791	3.539		0.000
	Visionary Leadership	0.038	0.019	0.142	0.046
	Self-Efficacy	-0.029	0.030	-0.080	0.339
	Motivation to Excel.	0.054	0.026	0.176	0.041

a. Dependent Variable: ICT Literacy

It can be shown that the path model is obtained from the following equation: $X_4 = 0.038x_1 - 0.029 x_2 + 0.054 x_3 + \epsilon y$. The causal relationship model chart between variables in Substructure 2 shows the empirical causal relationship between variables X_1 , X_2 , X_3 , and X_4 .

Tabel 4. Summary Model on ICT Literacy

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1		0.229 ^a	0.052	0.040

a. Predictors: (Constant), Achievement Motivation, Visionary Leadership, Self-Efficacy

Based on these calculations, the empirical causal relationship framework of variables X_1 , X_2 , and X_3 to X_4 in substructure 2 is as follows: $X_4 = 0.142 X_1 - 0.080 X_2 + 0.026 X_3 + \epsilon y$. Thus, the magnitude of the influence of other variables outside X_1 , X_2 , and X_3 on X_4 is $\epsilon y = 1 - 0.142 - (-0.080) - 0.026 = 0.912$. Thus, the magnitude of the influence of other variables outside X_1 , X_2 , and X_3 on X_4 is $\epsilon y = 0.912$.

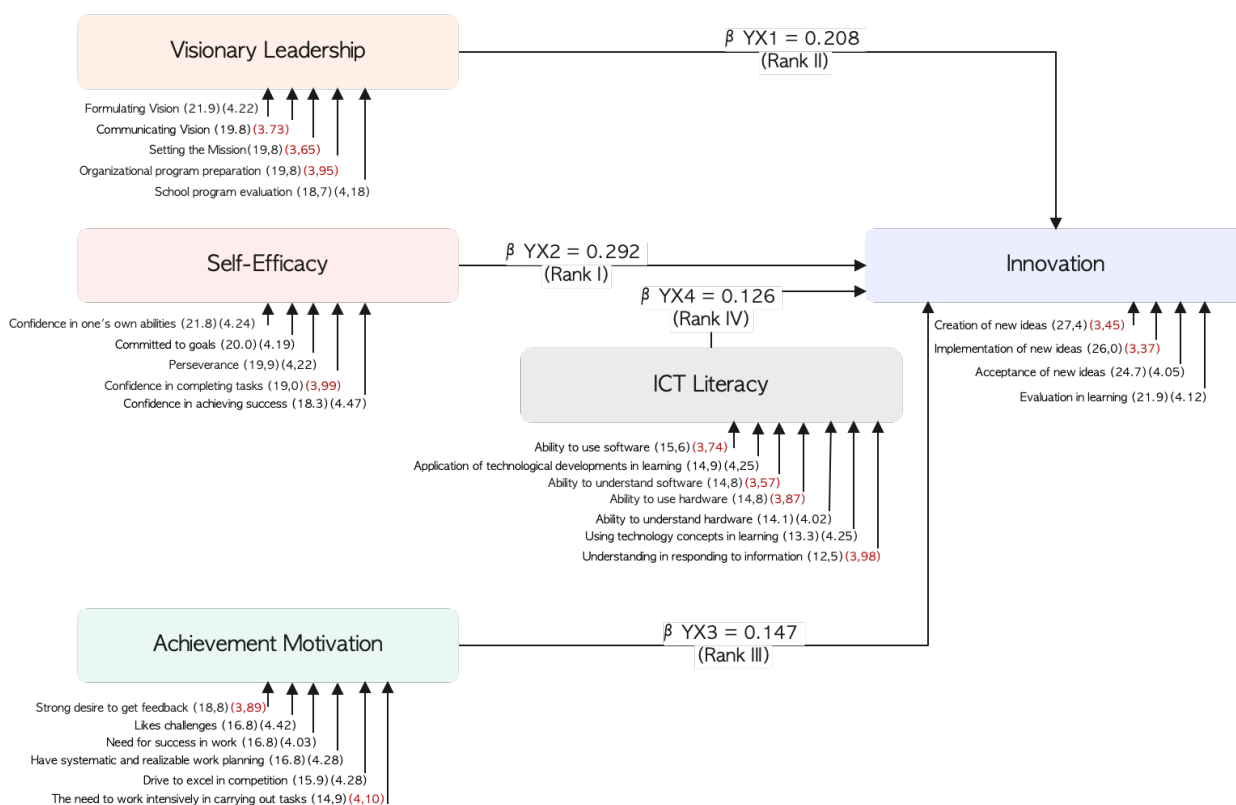


Figure 3. Model of the Influence Path of Visionary Leadership, Self-Efficacy, Achievement Motivation, and ICT Literacy on Teacher Innovation

Teacher innovation can be improved by strengthening the variables of visionary leadership, self-efficacy, achievement motivation, and ICT literacy by improving weak indicators and maintaining good indicators, based on the following SITOREM analysis results:

- Teachers' innovation is enhanced by improving the following indicators: 1) Application of new ideas/methods in teaching, 2) Acceptance of new ideas in teaching

- b. Visionary leadership is strengthened by improving the following indicators: 1) Communicating the vision, 2) Setting the mission, and 3) Developing organizational programs
- c. Self-efficacy is strengthened by improving the following indicators: 1) Commitment to goals.
- d. Achievement motivation is strengthened by improving the following indicators: 1) Enjoying challenges
- e. ICT literacy is strengthened by improving the following indicators: 1) Application of technological developments in learning, 2) Ability to understand software, 3) Ability to use hardware, 4) Using technological concepts in learning, and 5) Understanding in responding to information

Discussion

Based on the studies described, it can be concluded that digital literacy plays an important role in increasing learning motivation, learning independence, and academic outcomes for both students and teachers. Digital literacy does not only refer to technical skills in using technology, but also to a deep understanding of how technology can be used to enrich the learning process and support the achievement of better educational goals. Research by Skiller Indonesia (2020) shows that digital literacy, gadget usage, and the availability of technology in schools significantly influence students' learning motivation. This aligns with the findings of the STAIS Journal (2021), which confirmed that digital literacy and the use of learning media directly enhance students' learning motivation. High motivation encourages students to engage more actively in learning, both in face-to-face and online contexts.

Additionally, digital literacy is closely related to independent learning. Atlantis Press (2022) revealed that students with good digital literacy tend to be more independent in their learning process and can search for and utilize information more efficiently. This is important for learning that is more focused on students' ability to manage their own learning processes, thereby supporting better learning outcomes. Research from the Journal of Education at the University of Education Indonesia (2021) also shows that digital literacy significantly contributes to improving students' learning outcomes, particularly in subjects requiring in-depth analysis, such as mathematics and statistics. For educators, digital literacy has a significant impact on their teaching performance. Arxiv (2021) revealed that educators with strong digital skills are better able to integrate technology into their teaching practices, making the learning process more innovative and relevant. The Nine Youth Journal (2020) adds that high motivation stemming from strong digital literacy can improve teaching performance. Motivated educators tend to create engaging and effective learning experiences for students.

Overall, digital literacy is key to creating a more inclusive and dynamic learning environment and supporting the achievement of broader educational goals. Research conducted by the STAIS Journal (2021) and the UINSU Journal (2022) emphasizes that by improving digital literacy among students and educators, we can create higher-quality, adaptive, and highly competitive learning environments. Efforts to improve digital literacy at all levels of education must be a priority, whether through ongoing training for educators, providing adequate technology access for students, or developing curricula that are integrated with technology. Thus, technology-based education and

digital literacy will produce a generation ready to face global challenges and achieve better and more effective educational outcomes.

CONCLUSION

Fundamental Finding: This study found that digital literacy plays an important role in increasing students' motivation to learn and achieve their educational goals. With good digital literacy skills, students can access resources, collaborate, and manage information more effectively. In addition, intrinsic motivation driven by technological mastery tends to encourage students to become more involved in learning and to develop important skills. **Implications:** These findings suggest that educators should integrate digital literacy into their curriculum and teaching processes. The application of technology that supports student motivation can contribute to improving learning effectiveness. In addition, technology-based pedagogical innovations can facilitate the achievement of educational goals in a more engaging and contemporary way. **Limitation:** Some limitations of this study include the lack of cultural and geographical context variation that may influence how students access and use technology. This study is also limited to focusing on aspects of motivation and digital literacy without considering other factors that may influence the achievement of educational goals. **Future Research:** Future research should further explore the relationship between other factors, such as students' social and emotional skills, digital literacy, and motivation. Further studies should assess the impact of various types of educational technology on the achievement of learning objectives in different cultural and educational contexts.

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