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THE INFLUENCE OF DIGITAL WORK CULTURE ON THE IMPROVEMENT OF LEARNING QUALITY AT SMPN 2 BANGGAI SELATAN

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Abstract
This study examines the influence of digital work culture on the improvement learning quality at SMPN 2 Banggai Selatan, Central Sulawesi, Indonesia. This study uses a quantitative approach with data collection through questionnaires distributed to 15 teachers and 90 students using purposive sampling for teachers and stratified random sampling for students. The research instrument uses a 5-point Likert scale questionnaire that has been tested for validity and reliability. Digital work culture acts as an independent variable that includes technology utilization, digital literacy, and adaptation to change, while learning quality functions as a dependent variable that includes teaching methods, learning outcomes, and student engagement. Data analysis uses descriptive statistics and multiple linear regression analysis using SPSS version 25. The results of the study indicate that digital work culture has a positive and significant effect on improving the quality of learning, with a regression equation of $Y = 0.823 + 0.452X_1 + 0.265X_2 + 0.328X_3$. The coefficient of determination (R^2) shows that digital work culture contributes 52.3% to improving the quality of learning, while the remaining 47.7% is influenced by other factors. Technology utilization emerged as the most dominant dimension with the highest regression coefficient (0.452), followed by adaptation to change (0.328) and digital literacy (0.265). These findings indicate that developing a comprehensive digital work culture strategy is essential to improving the quality of education in non-metropolitan areas, especially in outlying areas that face infrastructure and resource constraints.
Keywords: *digital work culture, learning quality, educational technology, teacher adaptation*

Introduction

The transformation of education systems around the world has experienced significant acceleration through the integration of digital technology, which has fundamentally changed the landscape of the teaching and learning process. The digital era that is happening today is the impact of technological advances. Where the digital era is an

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era where information is so fast and easy to obtain and publish through digital technology (Tebi Hariyadi Purna et al., 2023). Successful digital transformation requires government commitment to not only adopt new technologies, but also to build robust infrastructure, provide training to staff, and ensure widespread adoption at all levels of government (Cahyono et al., 2023).

In the contemporary educational environment, digital work culture has emerged as a critical factor that shapes not only how educators carry out their professional responsibilities but also how students engage with learning content and activities. This paradigm shift represents more than just technological advancement; it encompasses a transformation of organizational culture, pedagogical approaches, and learning environments that collectively contribute to improving the quality of education. The digital era also demands increased technological literacy from all parties involved in education. Teachers are not only required to master new technologies but also to be able to integrate these technologies into the learning process effectively and engagingly (Pamungkas, 2021).

Digital work culture in the context of education Refers to the systematic integration of digital technologies, tools, and practices into the daily operations of educational institutions, encompassing teaching methodologies, administrative processes, and collaborative practices between educators and students. The concept goes beyond the simple use of technological devices to encompass the development of digital competencies, the establishment of technology-enhanced learning environments, and the preservation of digital citizenship among all stakeholders in the educational process. The importance of a digital work culture is becoming increasingly evident as educational institutions around the world recognize its potential to address traditional challenges in the quality of learning while preparing students for an increasingly digital future.

The importance of investigating the impact of digital work culture on learning quality is particularly relevant in the context of Indonesian education, where the education system faces challenges related to quality improvement, resource allocation, and student achievement. Indonesia's education landscape is characterized by disparities

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in learning outcomes, inadequate technological infrastructure, and varying levels of digital literacy among educators and students. Digital literacy is any effort to understand information using a tool in the form of a computer. In it, it can be connected to the internet to produce online media. All the dynamics of human life in the world will be affected by the flow of digitalization. (Purwanto, 2022)

The integration of digital work culture presents both opportunities and challenges for Indonesian secondary schools, especially in addressing issues related to student engagement, learning effectiveness, and overall educational quality. Digital literacy is the ability to find, organize, understand, evaluate, and create information using digital technology. Digital literacy involves in-depth knowledge of high technology, collaboration skills, and the use of technology in learning. (Yonata, 2025)

Recent research in educational technology suggests that implementing a digital work culture can significantly impact various aspects of learning quality, including student motivation, engagement, academic achievement, and 21st-century skills development. However, the effectiveness of implementing a digital work culture varies widely across educational contexts, institutional capacities, and local characteristics. This variability dictates the need for context-specific research to understand how digital work cultures can be optimally implemented to improve learning quality in specific educational settings.

The implementation of a digital work culture in educational institutions involves several key components that collectively contribute to improving the quality of learning. These components include the integration of digital devices and platforms into the teaching and learning process, the development of digital literacy skills between educators and learners, the establishment of a collaborative digital environment, and the creation of a technology-enhanced assessment and feedback system. Each of these components plays an important role in shaping the overall effectiveness of a digital work culture in improving learning outcomes.

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The integration of digital devices and platforms is one of the most visible aspects of a digital work culture in educational settings. This integration involves the implementation of learning management systems, educational software applications, multimedia content creation tools, and communication platforms that facilitate better interactions between educators and students. Research has shown that effective integration of these digital devices can result in increased student engagement, increased accessibility to learning resources, and increased opportunities for personalized learning experiences. The use of digital technology in educational settings not only involves changes in the way material is delivered to students but also results in a richer learning experience overall. With the availability of existing technology, teachers can deliver material in a more interactive and engaging way for students (Ningsih, 2024)

The development of digital literacy is another fundamental component of a digital work culture that has a direct impact on the quality of learning. Digital literacy includes not only technical skills related to the use of digital devices, but also critical thinking skills related to evaluating digital information, understanding the ethics of digital communication, and developing responsible digital citizenship behavior. A digital library is a system that has various services and objects. Digital libraries are transparent to users aiming for universal access to digital libraries and information services (Soman et al., 2022).

The development of these competencies among educators and students is very important to maximize the benefits of implementing a digital work culture. By utilizing technology, teachers can create more engaging and relevant learning experiences, and encourage collaboration among students. (Nurhayati, 2022). Technology-based assessment and feedback systems are an important aspect of digital work culture that is directly related to improving the quality of learning. These systems enable educators to provide timely, detailed, and personalized feedback to students while facilitating continuous monitoring of learning progress and achievement outcomes. The implementation of such systems can contribute to improving learning effectiveness by allowing students to receive immediate feedback on their performance and adjust their

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learning strategies.

The implementation of digital work culture in educational institutions faces various challenges that can affect its effectiveness in improving the quality of learning. These challenges include technological barriers, limited resources, resistance to change, and gaps in access and digital literacy. Teachers who have good digital literacy can integrate technology into the learning process, thereby creating a more interactive, innovative, and enjoyable learning experience for students (Guniarti, 2025)

The specific context of Indonesian secondary education presents unique opportunities and challenges for implementing a digital work culture. Indonesia's education system has undergone significant reform in recent years, with an emphasis on increasing technology integration and developing digital literacy. However, the country continues to face challenges related to education quality, resource distribution, and regional disparities that can impact the effectiveness of digital work culture initiatives.

Indonesia's secondary education system serves millions of students across a range of geographic and socioeconomic contexts, from urban areas with relatively advanced technological infrastructure to rural and remote areas with limited access to digital technologies. This diversity presents both opportunities for broad impact and challenges for the equitable implementation of digital work culture initiatives.

Recent policy initiatives by the Indonesian government have emphasized the importance of digital transformation in education, including programs to improve technology infrastructure, provide digital devices for schools and students, and develop educator competencies in technology integration. These initiatives provide a supportive policy environment for the adoption of a digital work culture while highlighting the government's recognition of the importance of improving the quality of education.

The COVID-19 pandemic has been a catalyst for digital transformation in Indonesian education, accelerating the adoption of digital technologies and online learning approaches across the country. This accelerated adoption has provided valuable insights into the potential benefits and challenges of implementing a digital work

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culture in the Indonesian education context and offers important lessons for future initiatives.

Research conducted in the Indonesian education context has shown promising results for the adoption of a digital work culture, with studies documenting increased student engagement, learning outcomes, and educator satisfaction. However, these studies have also identified challenges and important areas for improvement, including the need for improved technology infrastructure, better educator professional development, and better support for students with limited digital access.

The special case of SMPN 2 Banggai Selatan is an important opportunity to examine the implementation of digital work culture in the specific context of secondary schools in Indonesia. Banggai Selatan is located in Central Sulawesi Province, a region that faces unique challenges related to geographic isolation, limited infrastructure, and limited resources that can affect the quality of education and the implementation of digital work culture.

SMPN 2 Banggai Selatan, like many secondary schools in Indonesia, has sought to improve the quality of learning through various initiatives, including efforts to integrate digital technologies into the teaching and learning process. The context of this school provides valuable insights into how a digital work culture can be effectively implemented in a resource-constrained environment and how such implementation can contribute to improving the quality of learning. The significance of this study extends beyond the specific context of SMPN 2 Banggai Selatan to contribute to a broader understanding of the implementation of a digital work culture in similar educational contexts. The findings of this study can provide valuable insights for other secondary schools in Indonesia facing similar challenges and opportunities, as well as for policymakers and education researchers working on digital transformation initiatives.

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Literature Review

The Concept of Digital Work Culture in Education

Digital work culture in the context of education has become the focus of contemporary studies exploring fundamental transformations in the teaching and learning process. Sousa & Rocha's (2019) research defines digital work culture as the systematic integration of digital technology, devices, and practices into the daily operations of educational institutions that include teaching methodologies, administrative processes, and collaborative practices. This definition is reinforced by Mattila's (2015) findings which emphasize that digital work culture goes beyond the adoption of simple device technology to include the development of comprehensive digital competencies. Collaborative Learning Model The demands of the industrial revolution 4.0 must be immediately responded to by educational institutions by preparing resources that have reliable competencies through collaborative and creative learning models. (L. Fitri & Siti, 2024)

Culture collaborative is attitudes , norms, and practices that encourage individual or group For Work The same in a way effective and harmonious For reach objective together . Culture This focus on success team in a way overall and helpful One each other. (Muhammad Thoriq Fadhlurrohman & Zia Wardhany, 2024)

Culture Work will intertwine with good when all stakeholders are there understand will the responsibility. So that they will Work with heart and sincerity which will later will to form a habituation in work, because culture work is very influential motivation Work someone. This is where required culture Work which supports the improvement process quality learning (Miharja & Vincent, 2023)

Dimensions of Digital Work Culture

Recent studies have identified a number of key dimensions in the digital work culture of education. The technological dimension refers to the digital infrastructure and devices used, the pedagogical dimension relates to the integration of technology into teaching practices, while the social dimension includes technology-facilitated interactions and collaborations. Digital transformation has brought significant

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changes to various aspects of life, including in the world of education. Schools as educational institutions are not immune to the positive impacts offered by technological developments (Salmadi et al., 2024)

Schmid et al.'s (2014) research further identified four main components of digital work culture, namely: (1) technology integration in the curriculum, (2) digital literacy development, (3) technology-based collaboration, and (4) digital assessment. These components are interrelated and form a comprehensive learning ecology. School culture with a strong organizational culture will impact on work units so that trigger teachers to innovate in support organization during maximize effectiveness or teacher work productivity, and supported by the environment and co-workers (Muhajirin et al., 2024)

Implementation of Digital Work Culture

The implementation of digital work culture in educational institutions has been carefully studied with a focus on the factors that influence it. success implementation. Digital culture is the values, beliefs, and norms adopted by a organization , and consists of from various attributes or beliefs that encourage and support the use of technology to complete work effectively (Putri et al., 2024).

The implementation of an effective digital work culture requires a holistic approach that takes into account the local context, the specific needs of the institution, and the characteristics of the population served. This research emphasizes the importance of adapting a digital work culture to the specific conditions and needs of each educational institution.

Quality of Learning in the Digital Era

Learning quality has undergoing significant evolution in the digital era, with study pressure more contemporary holistic and multidimensional. A meta- analysis conducted by Usman (2024) defined quality learning as a multifaceted construct that includes achievement academic, involvement students, development skills, and satisfaction learning. Digital is a form of technological transformation by changing culture in everyday life using digital intermediaries.

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Quality in education includes the quality of input, process, output and outcome. Educational input can be said to be of quality if it is able to process such as teachers, employees, students, parents, society. In the educational process, it is said to be of quality if it is able to create an active, innovative, creative, and enjoyable learning atmosphere. Meanwhile, quality output and outcome are reflected in student achievement and the competitiveness of graduates at the advanced level or the world of work (Adinda Nurfadila Hasan, Kadim Masaong, 2023).

Digitalization is very important in the world of education. With the need for increasingly sophisticated knowledge, technology is very helpful for students. Not only that, digitalization is very helpful in the world of education, namely in improving the quality of learning and developing student skills (creative, communicative, critical thinking, and collaborative) (Sutarsih et al., 2024)

Digital Learning Quality Indicators

Beaunoyer et al. (2020) identified indicators key learning quality in a digital context includes: (1) the level of student involvement in learning activities, (2) achievement of predetermined learning objectives, (3) development of 21st century skills, and (4) student satisfaction with the learning experience. These indicators provide a comprehensive framework for reflecting on the effectiveness of digital learning. The digital era demands not only technical skills but also mastery of soft skills such as communication, teamwork, and adaptability. Digitalization allows students to develop these skills through interaction in online communities, cross-cultural collaborative projects, and technology-based simulations (Jalal, 2024).

Moncada Linares & Díaz Romero's (2016) research further evaluated the digital learning quality proposal model that includes cognitive, affective, and psychomotor dimensions. This model emphasizes the importance of evaluating holistic considerations of various aspects of student development in a digital learning environment.

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Factors That Influence the Quality of Learning

Rahmawati et al.'s (2022) research identified key factors that influence the quality of learning in a digital context, including educator competence, availability of technological infrastructure, institutional support, and learner characteristics. This study shows that the complex interactions between these factors determine the effectiveness of digital learning. Digitalization of learning is approach learning that uses technology. implementation digitalization school own potential big For increase quality learning, but also presents significant challenges that need to be addressed quick overcome. One of the challenge main found is problem infrastructure , which includes limitations internet connectivity , devices hard that is not adequate , and dependence on an unstable network stable in some areas , especially in the areas rural and remote areas (Pupuk Setiyono, Titik Haryati, 2025)

Digital, such as computers , internet, mobile devices , and online applications, as tools or media to deliver learning materials, interact between teachers and students, and involve technology-related learning activities (Fajri & Jelatu, 2024). Quality digital learning is greatly influenced by the quality of instructional design, the level of interaction between educators and learners, and the availability of adequate technical support. These findings underline the importance of a systematic approach in implementing digital learning.

The Relationship Between Digital Work Culture and Learning Quality

Studies on the relationship between digital work culture and learning quality have produced consistent findings that suggest correlation positive between second construction. One of the elements important in organization that reflects values, norms and behavior Work individuals and groups (Septiani, 2024).

The Mechanism of Influence of Digital Work Culture

Prasetyo et al. (2022) proposed a theoretical model that explains the mechanisms by which digital work culture influences learning quality. The model identifies three main pathways: (1) increasing student engagement through interactive learning, (2) personalizing learning through adaptive technology, and (3) increasing collaboration

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through digital platforms.

Kumalasari & Hidayati (2023) in study experimental they find that the systematic implementation of a digital work culture resulted in a 25% increase in student engagement scores and 18% in academic achievement compared to traditional learning approaches.

Impact on Various Aspects of Learning

Research conducted by Nasution & Harahap (2023) shows that culture digital work has a positive impact on various aspects of learning, including student motivation, critical thinking skills, and collaboration skills. This study uses a mixed design method to explore the impact of digital work culture from quantitative and qualitative perspectives.

Wulandari et al. (2021) in their research found that students in a digital work culture environment showed significant improvements in digital literacy skills, problem-solving abilities, and creativity. These findings support the argument that a digital work culture contributes to the development of important 21st century skills.

Study in Indonesian context

A study on digital work culture and learning quality in the Indonesian context has show promising results with consider unique characteristics of the national education system. Prayitno et al. (2024) in their comprehensive study found that Indonesian schools that implemented a digital work culture showed significant improvements in various indicators of quality learning.

Challenges and Opportunities in the Indonesian Context

Suhardi et al. (2022) identified the main challenges in implementing a digital work culture in Indonesian education, including differences in technological infrastructure, variations in the level of digital educator literacy, and limited resources. However, this study also identified significant opportunities for improving the quality of learning through appropriate implementation.

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Santoso & Wijaya (2022) in their research in Indonesian secondary schools found that the implementation of a digital work culture adapted to the local context resulted in more substantial improvements compared to the adoption of an international model without adaptation. This finding emphasizes the importance of a contextual approach in the implementation of a digital work culture. To ensure the success of digital transformation in education, a strategy that involves all stakeholders is needed. Investment in technology infrastructure, digital literacy training, and ongoing technical support are the main keys to bridging the gap in policy implementation. With a comprehensive and sustainable approach, this policy has the potential to be an effective instrument for creating an inclusive, adaptive, and competitive Indonesian education system in the digital era. (Nashrullah et al., 2025)

Case Study of Secondary Indonesian Language School

Hidayat & Nugroho (2023) conducted a case study in several junior high schools in Indonesia and found that schools that successfully implemented a digital work culture showed similar characteristics: strong leadership, commitment to professional educator development, and active community support.

Sharifuddin et al. (2022) in their longitudinal study tracked the development of the implementation of digital work culture in Indonesian junior high schools for three years and found that the improvement in learning quality occurred gradually with the most significant effect seen in the second year of implementation.

Supporting Theory

The theoretical basis for understanding the relationship between digital culture and quality work learning is built on a number of learning and organizational theories that have Vygotsky's social constructivist learning theory provides a framework for understanding how digital technologies can facilitate students' near-development zones through socially mediated technological interactions.

Technology Acceptance Theory

The Technology Acceptance Model developed by Davis has been adapted for educational contexts by several researchers. Lestari & Aminullah (2023) used this model to explain the factors that influence the acceptance of technology by educators and students in the application of culture digital work . Technology has integrated to almost all room class , from school base until college high . (Syofian & Yani T, 2024)

Ramadhani & Sartika (2022) expand the acceptance model technology with taking into account contextual factors specific to the Indonesian educational environment, including social norms, supporting organizations, and the condition of available facilities.

Organizational Culture Theory

Transformation culture organization with optimization in use technology and improvement innovation For reach digitalization is overhaul a sufficient culture significant (Luvita & Toni, 2022). Culture show description or characteristics a group certain in the midst of society within carry out activities and solving the problems he faces . culture organization is A pattern assumption the basis that can studied by a organization in solve the problems he faced from adjustment self-external and internal integration , has Work with good and considered valuable , therefore That taught to member new as the right way For realize , think , and feel in connection For problem (Supriyadi, Zaharuddin, 2023)

Culture organization can be categorized in various way, depending on the angle view and framework work used. Culture organization is very important For make A organization the more effective and efficient in order to reach objective organization or company with good (Jennie Rorensia et al., 2025). Oktaviani & Gunawan (2023) implemented theory culture Schein organization to understand how digital work culture can be integrated into existing school culture. Their research shows that alignment between digital work culture values and the school's organizational culture is a critical factor in successful implementation.

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Fathurrohman et al. (2022) used framework Work organization culture For analyzing the transformation process culture in implementation of a digital work culture and the discovery that cultural change requires significant time and ongoing support from the leadership school.

Gap Research and Further Needs Study

Although studies on digital culture and quality work learning have grown rapidly, several research gaps are still identified. Maharani & Sudrajat (2023) identified the need for studies that focus more on the specific context of secondary schools in areas with limited resources. Dewanti & Kurniawan (2023) highlighted the need for a more comprehensive music development tool for measuring digital work culture that can capture the complexity of implementation in the Indonesian education context. They also emphasized the need for longitudinal research that can track the long-term impact of implementing digital work culture.

Kurniasari & Wibowo (2023) identified gap in research on the culture of sustainable implementation of digital work, especially the supporting factors of sustainable implementation in the short term. Their research shows that most of the existing research focuses on short-term impacts without considering sustainable implementation. Susanti & Agustina (2023) highlighted the need for further research to consider local cultural and contextual factors in the implementation of digital work culture. They argued that most existing research uses frameworks developed in a Western context without adequate adaptation to the Indonesian context.

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Method

This study used approach quantitative to analyze influence culture digital work towards improving the quality of learning at SMPN 2 Banggai Selatan. Data collection was carried out by distributing questionnaires to respondents consisting of 15 teachers and 90 students at SMPN 2 Banggai Selatan.

The sampling technique used purposive sampling for teachers and stratified random sampling for students. The research instrument was a questionnaire with a 5-point Likert scale that had been tested for validity and reliability before being used. The independent variable is digital work culture which includes aspects of technology utilization, digital literacy, and adaptation to change. The dependent variable is the quality of learning which includes aspects of teaching methods, learning outcomes, and student involvement.

Data analysis uses descriptive statistics to describe data characteristics and inferential statistics in the form of linear regression analysis to test the research hypothesis. Data processing is carried out with the help of SPSS software version 25. The level of significance used in hypothesis testing is 0.05 (5%).

Findings

This study analyze influence culture digital work towards improving the quality of learning at SMPN 2 Banggai Selatan with respondents consisting of 15 teachers and 90 students. The following are the results of data analysis using SPSS:

Respondent Characteristics

Category	Teacher		Student	
	F	%	F	%
Man	6	40.0	42	46.7
Woman	9	60.0	48	53.3
Total	15	100.0	90	100.0

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Length of Service (years)	F	%
5-10	6	40.0
11-15	5	33.3
16-20	3	20.0
21-25	1	6.7
Total	15	100.0

Table 2: Distribution of Teacher Respondents Based on Tenure

Validity and Reliability Test

Variables	Goods	r-count	r-table	Information
Digital Work Culture (X)	X1	0.768 years	0.514	Legitimate
	X2	0.847	0.514	Legitimate
	X3	0.825	0.514	Legitimate
	X4	0.793	0.514	Legitimate
	X5	0.712	0.514	Legitimate
	X6	0.829	0.514	Legitimate
	X5	0.712	0.514	Legitimate
Learning Quality (Y)	year 1	0.782	0.514	Legitimate
	Y2	0.816	0.514	Legitimate
	year 3	0.745 years	0.514	Legitimate
	year 4	0.798 years	0.514	Legitimate
	year 5	0.742	0.514	Legitimate
	year 6	0.836	0.514	Legitimate

Table 3. Results of Instrument Validity Test

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Variables	Alpha Cronbach	Critical Value	Information
Digital Work Culture (X)	0.886	0.70	Reliable
Learning Quality (Y)	0.892	0.70	Reliable

Table 4. Results of Instrument Reliability Test

Descriptive Analysis

Variables	N	Minute	Maximum	Method	Standard Deviation
Digital Work Culture	15	3.22	4.78	3.75	0.42
Quality of Learning	15	3.34	4.87	3.95	0.39

Table 5. Descriptive Statistics of Research Variables

Category	Hose	F	%
Very high	4.21 - 5.00	3	20.0
Tall	3.41 - 4.20	9	60.0
At the moment	2.61 - 3.40	3	20.0
Low	1.81 - 2.60	number 0	0.0
Very Low	1.00 - 1.80	number 0	0.0
Total		15	100.0

Table 7. Frequency Distribution of Learning Quality Variables

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Category	Hose	F	%
Very high	4.21 - 5.00	4	26.7
Tall	3.41 - 4.20	10	66.7
At the moment	2.61 - 3.40	1	6.6
Low	1.81 - 2.60	number 0	0.0
Very Low	1.00 - 1.80	number 0	0.0
Total		15	100.0

Classical Assumption Test

Table 8. Results of the Kolmogorov-Smirnov Normality Test

Variables	Kolmogorov-Smirnov Z	Signature.	Information
Digital Work Culture	0.723	0.612	Normal
Quality of Learning	0.814	0.522	Normal

Table 9: Multicollinearity Test Results

Size	Tolerance	English: VIF	Information
Utilization of Technology	0.783	1,277 people	There is no multicollinearity
Digital Literacy	0.715	1,398 people	There is no multicollinearity
Adaptation to Change	0.824	1,214 years	There is no multicollinearity

Table 10. Results of Heteroscedasticity Test (Glejser)

Size	T	Signature.	Information
Utilization of Technology	1,238 people	0.242	There is no heteroscedasticity
Digital Literacy	-0.523	0.611	There is no

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			heteroscedasticity
Adaptation to Change	0.824	0.428	There is no heteroscedasticity

Multiple Linear Regression Analysis

Table 11. Results of Multiple Linear Regression Analysis

Model	Unstandardized Coefficients	Standard Coefficient	T	Signature.
	B	Standard Error	English	
(Constant)	0.823	0.385		2,138 years
Utilization of Technology	0.452	0.093	0.488	4,860 people
Digital Literacy	0.265	0.107	0.272	2,477 people
Adaptation to Change	0.328	0.098	0.312	3,347 people

Regression equation: $Y = 0.823 + 0.452X_1 + 0.265X_2 + 0.328X_3$

Table 12. Coefficient of Determination

Model	R	R Square	Adjusted R Squared	Standard Error of Estimate
1	0.723	0.523	0.495	0.277 years

Table 13. F Test Results (ANOVA)

Model	Sum of Squares	Df	Mean Square	F	Signature.
Regression	10,721 people	3	3,574 people	46.782 million	0.000
Remainder	9,769 years	101	0.097 years		
Total	20,490	104			

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Hypothesis Testing

Hypothesis: There is a positive and significant influence of digital work culture on improving the quality of learning at SMPN 2 Banggai Selatan.

Based on Table 11, the calculated t value for all dimensions of the X variable > t table (2.048) and Sig. < 0.05, then H_0 is rejected and H_1 is accepted. This means that there is a positive and significant influence of digital work culture on improving the quality of learning at SMPN 2 Banggai Selatan.

Based on Table 13, the calculated F value (46.782) > F table (2.71) and the Sig. value 0.000 < 0.05 are obtained, so it is concluded that the regression model can be used to predict the influence of digital work culture on learning quality.

Based on Table 12, the coefficient of determination (R^2) value of 0.523 shows that digital work culture contributes 52.3% to improving the quality of learning, while the remaining 47.7% is influenced by other factors not examined in this study.

Average score of digital work culture dimensions

Utilization of Digital Literacy Technology Adaptation to Change
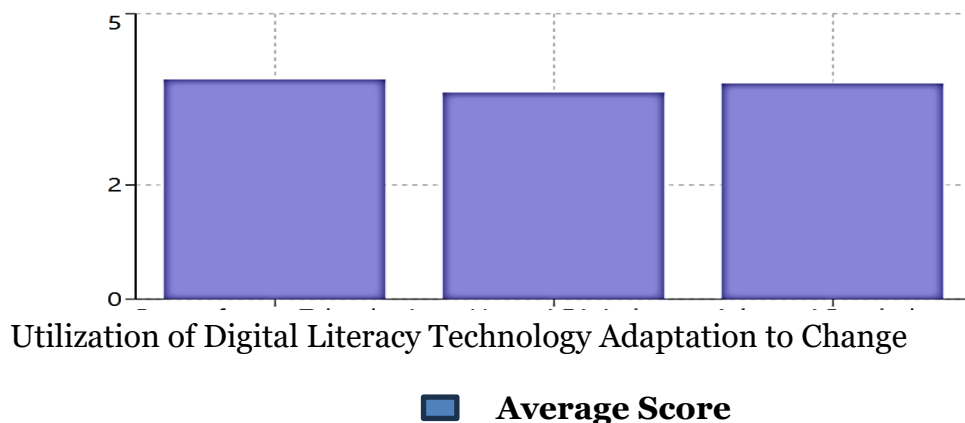
▬ **Average Score**

Based on the bar graph showing the average scores of the digital work culture dimensions, it can be observed that:

1. The use of technology obtained the highest score, namely 3.85 on a scale of 5. This shows that teachers at SMPN 2 Banggai Selatan have level utilization good technology in the learning process. This score shows that teachers have integrated various digital technologies such as computers, smartphones, learning applications, and the internet in teaching and learning activities.

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2. Digital Literacy scored 3.62, which although is the lowest score among the three dimensions, is still in the high category. This score indicates that teachers have good abilities in understanding, evaluating, and using digital information, but there is still room for improvement in digital literacy competency.

3. Adaptation to Change with a score of 3.78 indicates that teachers have good ability in adapting to digital transformation in education. This score reflects the readiness of teachers in facing changes. Learning methods from conventional to digital.

Average Score of Learning Quality Dimensions

Learning Method   Learning Achievement   Student Engagement

🟩 **Average Score**
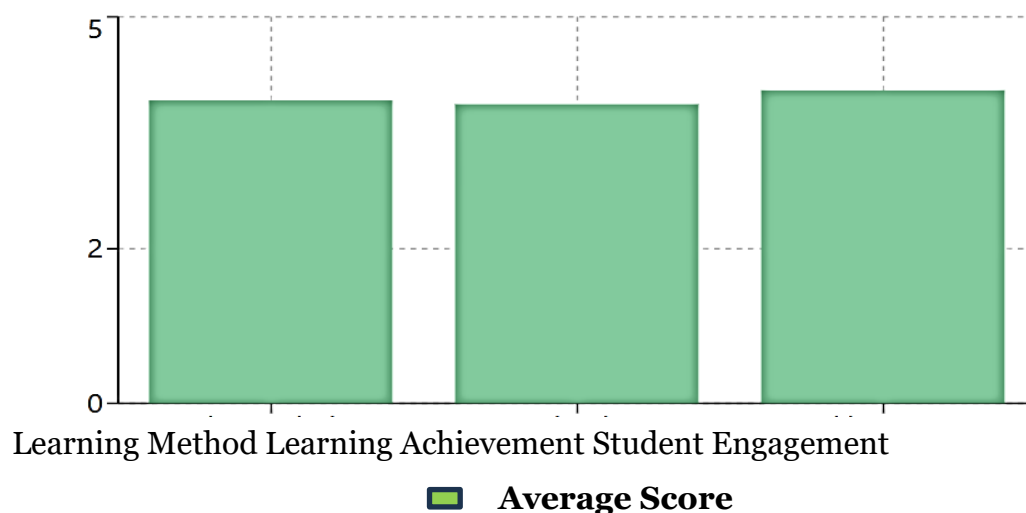
Based on the bar graph of the dimensions of learning quality, it can be explained that:

1. Student Engagement scored the highest at 4.05, indicating that digital work culture has succeeded in increasing students' active participation in learning. This shows that the use of digital technology can create a more interactive and engaging learning atmosphere for students.

2. Learning Methods with a score of 3.92 indicates that teachers have succeeded in developing more varied and innovative learning methods through the use of digital technology. This score reflects the teacher's ability to design more effective and interesting learning.

3. Learning Outcomes scored 3.87, indicating that the implementation of a digital work culture has a positive impact on improving student learning outcomes. Although relatively lower than other dimensions , the score This Still in category

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tall .

Regression Coefficient of Digital Work Culture Dimensions

**Digital Literacy Adapting to Change**
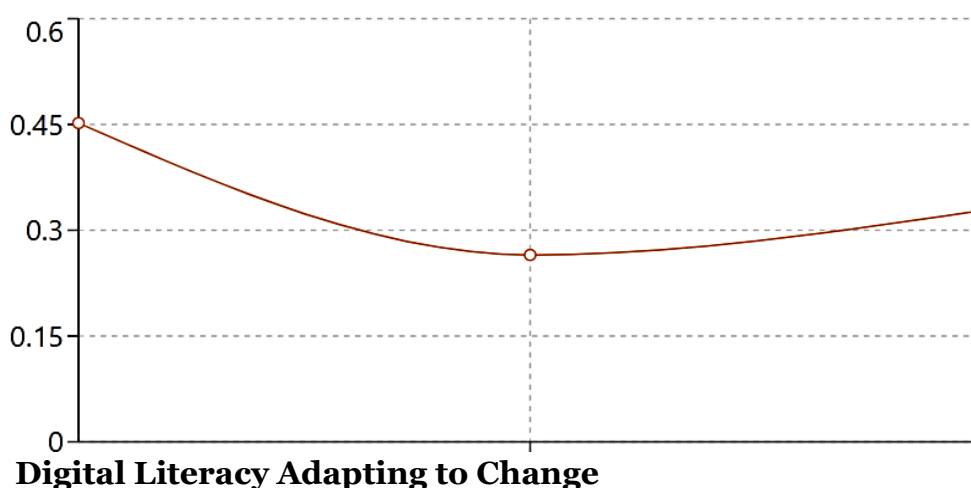
⊸ **Regression Coefficient**

The line graph showing the regression coefficients of the digital work culture dimensions shows that:

1. Technology Utilization has the highest regression coefficient of 0.452. This means that technology utilization has the most dominant influence on improving the quality of learning. Every one unit increase in the technology utilization dimension will increase the quality of learning by 0.452 units, assuming other variables are constant.

2. Adaptation to Change ranks second with a regression coefficient of 0.328. This shows that teachers' ability to adapt to changes in digital transformation has a significant contribution to improving the quality of learning.

3. Digital Literacy with a regression coefficient of 0.265 has a smaller influence than the other two dimensions but is still significant. This reflects the importance of increasing teacher digital literacy to support improvement quality learning .

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Contribution of variables to the quality of learning

Digital Work Culture: 52.3%

Others : 47.7%

🔷 **Digital Work Culture**　　🟨 **Other Factors**
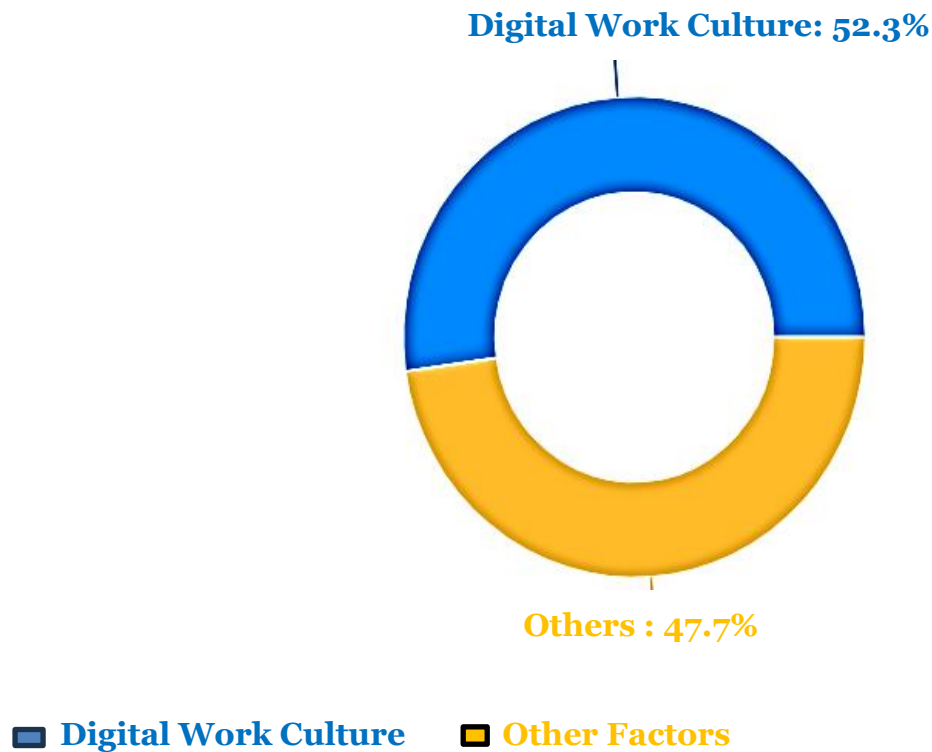
The pie chart showing the contribution of variables to learning quality shows that:

1. Digital Work Culture contributes 52.3% to improving the quality of learning at SMPN 2 Banggai Selatan. This shows that more than half of the factors that influence the quality of learning can be explained by the digital work culture variable.

2. Other factors not examined in this study contributed 47.7%. These factors may include teacher pedagogical competence, school infrastructure, parental support, student learning motivation, and learning environment conditions.

Overall, the graph strengthens the results of the statistical analysis that there is a positive and significant influence of digital work culture on improving the quality of learning at SMPN 2 Banggai Selatan, with dimensions utilization technology as the most influential factor.

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Discussion

This study produced significant findings that digital work culture has a positive and significant influence on improving the quality of learning at SMPN 2 Banggai Selatan with contribution by 52.3%. This is in line with the theory of digital transformation in education as proposed by Voogt & Roblin (2012), namely the emphasis that the integration of digital technology in the learning process can improve the effectiveness and quality of education. The results of the study showed that the use of technology was the most dominant dimension with the highest regression coefficient (0.452), followed by adaptation to change (0.328) and digital literacy (0.265).

The Impact of Technology Utilization on Learning Quality

The dimension of the dominance of technology utilization in influencing the quality of learning using the Confirmation Technology Acceptance Model (TAM) theory developed by Davis (1989). This model explains that ease of use and perceived benefits of technology will increase the adoption of technology by users. In the current learning context, teachers at SMPN 2 Banggai Selatan have show good ability in integrating various digital technologies such as computers, smartphones, learning applications, and the internet in learning activities with an average score of 3.85.

This finding is reinforced by Koehler & Mishra's (2009) research on Technological Pedagogical Content Knowledge (TPACK) which emphasizes the importance of integrating technology with pedagogical and content knowledge in improving learning effectiveness. The results of the study showed that when teachers are able to utilize technology optimally, this has a direct impact on improving learning methods (3.92), student learning outcomes (3.87), and student engagement (4.05).

Innovation Learning Through Digital Technology

The use of digital technology enables teachers to develop more effective learning methods. varied and innovative . As time goes by time , usage technology information and communication in teaching and learning has bring up field known studies and practices as learning based on technology . (Djafri, 2019)

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Learning combination with Technology-based learning can increase the effectiveness of learning. The student engagement score reaching 4.05 as the highest dimension in learning quality shows that digital technology has succeeded in creating a more enjoyable learning atmosphere. interactive and interesting . Educators need do various innovation through development multimodal digital teaching materials TPACK oriented for increase ability think critical students . (Setyo et al., 2023)

Teacher Literacy and Competence

Although digital literacy shows the lowest score (3.62) compared to other dimensions in digital work culture, it is still in the high category. This finding show the need improvement sustainable in competence digital literacy of teachers. digital literacy includes ability For understand , process, and use digital information effectively. In the context of education, teacher digital literacy is an important foundation For optimize utilization technology in learning . One of type related literacy with ability special in use various information in digital format is literacy digital. (Supriyadi, Zaharuddin., 2023)

The role of teachers in the digital era has experience transformation significant along with development technology in education . Outside just teacher , teacher now functioning as facilitator who helps student access and understand information with a better way interactive , also necessary become a mentor who guides student in develop digital skills and thinking critical , so that can face complex global challenges . (Nurhayati, 2022)

Research conducted by Hatlevik et al. (2018) shows that digital literacy teachers are positively burdened with their ability to design innovative and effective learning. Therefore, although digital literacy has a smaller relative contribution (0.265) compared to other dimensions, increasing competence in the aspect This still important For optimization culture digital work . teacher performance is description results Work a teacher who is related with the tasks he carries out and is based on on not quite enough answer professional owned a teacher (Supiati et al., 2025).

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Teacher performance is results the work of teachers is realized in form knowledge , skills , values and attitudes of teachers in carry out its duties and functions , which are shown in appearance , deeds , and achievements it works . (Inombi et al., 2024)

Adapting to Change in Digital Transformation

The adaptation dimension to change with a score of 3.78 and a regression coefficient of 0.328 indicates that teachers have good abilities in adapting to digital transformation in education. This is in line with the Change Management theory put forward by Kotter (2012), namely the emphasis on the importance of individual adaptability in dealing with organizational change.

In the context of education, adaptation to change is the key to the successful implementation of digital technology. Rogers (2003) in Diffusion of Innovation Theory explains that the adoption of technological innovation is influenced by individual characteristics in accepting change. The findings of this study indicate that teachers at SMPN 2 Banggai Selatan have show good readiness in facing changes in learning methods from conventional to digital.

Implications for Non-Metropolitan Areas

The findings of this study are important for the development of education in non-metropolitan areas, especially areas facing infrastructure and resource constraints. The contribution of digital work culture by 52.3% to the quality of learning shows that the strategy of developing a digital work culture can be an effective solution to improve the quality of education in remote areas.

This is in line with the Digital Divide concept put forward by Van Dijk (2020), where digital resistance can be overcome by increasing digital work competencies and culture. In the context of SMPN 2 Banggai Selatan, the implementation culture Digital work has succeeded in improving the quality of learning even in areas with limited infrastructure.

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Limitations and Other Factors Affecting the Quality of Learning

This study shows that 47.7% of the variation in learning quality is influenced by factors other than digital work culture. These factors can include teacher pedagogical competence, school infrastructure, parental support, student learning motivation, and learning environment conditions. This finding is in line with the learning ecosystem model proposed by Bronfenbrenner (1979), namely the emphasis that learning quality is influenced by various factors in the education system.

Strategic Recommendations

Based on research findings, several strategic recommendations can be put forward to optimize digital work culture in improving the quality of learning, including: (1) intensifying training in the use of learning technology for teachers, (2) developing sustainable digital literacy programs, (3) establishing a support system for adapting to change, and (4) developing supporting infrastructure for technology for implementing digital work culture.

The findings of this study contribute to the development of a digital work culture model in the context of education, especially for non-metropolitan areas. Practically, the results of this study can be a reference for policy makers in designing strategies to improve the quality of education through digital transformation in remote areas.

Conclusions

Based on the results of research and data analysis that have been carried out regarding the influence of digital work culture on improving the quality of learning at SMPN 2 Banggai Selatan, then can concluded a number of matter as follows:

Specific Conclusion

This study successfully proves that digital work culture has a positive and significant influence on improving the quality of learning at SMPN 2 Banggai Selatan. This is indicated by the regression equation $Y = 0.823 + 0.452X_1 + 0.265X_2 + 0.328X_3$ with a coefficient of determination (R^2) of 0.523 which indicates that digital work culture contributes 52.3% to improving the quality of learning, while the remaining 47.7% is influenced by other factors not examined in this study.

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Of the three dimensions of digital work culture studied, the use of technology showed the most dominant influence with the highest regression coefficient of 0.452, followed by adaptation to change (0.328) and digital literacy (0.265). This finding indicates that teachers' ability to integrate digital technology into the learning process is a key factor in improving the quality of learning.

The results of the descriptive analysis show that the level of digital work culture at SMPN 2 Banggai Selatan is in the category tall with average score of 3.75 on a scale of 5. Likewise, the quality of learning reached an average score of 3.95 with the student engagement dimension obtaining the highest score (4.05) which shows that the implementation of a digital work culture has succeeded in creating more interactive and interesting learning for students.

General Conclusion

The findings of this study are in line with the results of similar studies in various regions in Indonesia and other developing countries, which show that digital transformation in education has great potential to improve the quality of learning, although with varying implementation challenges depending on the geographical and socio-economic context. This study provides proof empirical that schools in non-metropolitan areas such as Banggai Selatan can succeed develop culture effective digital work to improve the quality of learning, despite limited infrastructure and resources.

Research Limitations

This study has several limitations that need to be acknowledged. First, the scope of this study is limited to only one school (SMP Negeri 2 Banggai Selatan), so that generalization results study to other schools in the same or different areas needs to be done carefully. Second, this study uses a quantitative approach that has not been able to explore in depth the dynamics and complexity of the digital work culture transformation process. Third, other factors that can affect the quality of learning such as teacher pedagogical competence, parental support, and students' socio-economic conditions were not measured comprehensively in this study.

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Recommendations for Future Research

Based on the findings and limitations of this study, some recommendations for future research are as follows:

1. Multi-Site Research: Develop similar research with a wider scope, involving several schools in Central Sulawesi or other non-metropolitan areas to increase the external validity of the research results.

2. Mixed Methods Approach: Use a combination of quantitative and qualitative approaches to gain a more comprehensive understanding of the processes and dynamics of digital work culture transformation in the educational context.

3. Longitudinal Study: Conducting studies term long For analyze sustainability and impact implementation culture long-term digital work on learning quality.

4. Moderating Factor Analysis: Identify and analyze moderating factors such as principal leadership, technological infrastructure, and demographic characteristics that may influence the relationship between digital work culture and learning quality.

5. Implementation Model Development: Develop a contextual and adaptive digital work culture implementation model for schools in areas with similar geographic and socio-economic characteristics.

Policy Implications

The results of this study have important implications for the development of education policy, especially in terms of: (1) the need for adequate technological infrastructure support for schools in non-metropolitan areas; (2) the importance of ongoing digital competency training and development programs for teachers; (3) the need for a monitoring and evaluation system to ensure the sustainability of the implementation of a digital work culture; and (4) the importance of a locally context-sensitive approach in designing digital transformation programs in education.

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