

The Influence of Digital Classroom Model Using Local Wisdom Towards Elementary School Student's Learning Motivation And Learning Independence In Indonesia

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Abstract. A digital classroom learning model based on local wisdom was developed following the characteristics of the 4.0 era and the characteristics of elementary school students because this research was motivated by the low learning motivation and learning independence of elementary school students. This study aimed to determine the influence of the digital classroom learning model on elementary school pupils' learning motivation and independence. This study is quasi-experimental. To measure participants' learning motivation and independence, a questionnaire was used in the study. According to the study's findings, (1) using a digital classroom model based on local wisdom has an impact on Indonesian elementary school students' learning motivation and elementary school students' learning independence, and (2) For elementary school students, there is a significant positive relationship between learning motivation and learning independence. According to the study's findings, elementary school children learning motivation and independence are impacted by the digital classroom learning model.

Keywords: digital classroom model, learning independence, learning motivation, local wisdom.

1 Introduction

It is impossible to stop the advancement of technology and information systems in the 4.0 era [1]. The rapid development of technology and information systems affects all aspects of human life. The dominant society's mindset and behavior regarding the usage of technology have changed as a result of this evolution. The educational system is likewise impacted by this. The 4.0 era's educational system affects technical advancements as well. The educational system must be able to create technology-based learning procedures for today's students. The 4.0 era of learning is primarily characterized by technology-based learning.

Modern learning processes must be able to replace conventional learning processes in the 4.0 era [2]. The way we learn today is remarkably similar to how we learn through technology. Students today have a strong attachment to technology; thus it is crucial to promote this technology-based learning [3]. Students are exposed to technology every day, making technology-based learning relevant and consistent with the modern educational process. To

create technology-based learning processes, teachers must be competent to do so, included in the elementary school learning process.

The learning process differs from that at other advanced levels in elementary schools [4]. The elementary school learning process needs to be modified to fit the needs of the pupils there. Elementary school learning must have contextualized qualities [5]. This implies that the educational process must be relevant to students' everyday lives. This is because students in elementary school are in a concrete operational phase that necessitates contextualizing the learning process. Learning must be tailored not just to the characteristics of elementary school pupils but also those of the 4.0 era, i.e., the learning process must be tech-based. Digital classroom learning is one type of education that fits the needs of elementary school pupils and the learning characteristics of the 4.0 era.

An LMS is used as an online learning tool in the digital classroom learning process [6]. Utilizing computers, smartphones, and the internet during class time is known as "digital classroom learning"[7]. Students can access online learning from any location at any time provided by digital classroom learning [8]. According to the literature review, digital classroom learning is learning that is in line with the 4.0 era and applicable to elementary schools to raise the standard of learning [9-11]. Elementary school students can benefit from digital classroom learning. A digital classroom learning model has been built by researchers through prior studies. It is referred to be a digital classroom learning paradigm based on local wisdom since it combines local wisdom and technology.

The idea behind this strategy of learning from local wisdom is that Indonesia is a culturally diverse nation. In Indonesia, there are up to 1,340 different ethnic groups [12-13]. This demonstrates how diverse Indonesia's cultures, languages, and ethnic groups are. This does not, however, justify Indonesia remaining one as the Indonesian people. The Indonesian people face difficulties as a result of the diversity of the country's cultures. The Indonesian people must be able to maintain their culture while keeping up with modern advancements. It's not necessary to ignore the times while preserving the culture of the country. The advancement of information and technology can be used to foster cultural growth in a country.

It is undeniable that the emergence of the 4.0 era affects Indonesian culture. Many members of Indonesia's current generation are too preoccupied with technical advancements to remember to protect their country's culture. Therefore, efforts are required to use technical advancements as a means of protecting the country's culture. One of them is including it in the teaching and learning process.

This serves as the context for researchers who are creating a local wisdom-based digital classroom learning model. Experts have validated this learning model, which they have deemed viable and employable. To ascertain its effect on learning motivation and learning independence, a digital classroom learning model based on local wisdom was established. This is because learning during the COVID-19 epidemic takes place online. Learning independence and motivation are outcomes of this online learning process. Based on the findings of a questionnaire given to 100 Indonesian elementary school pupils, it was determined that these students' learning motivation when learning online was still poor, with an average score of 58.76. The researchers' examination of the literature confirms this, finding that elementary school kids in Indonesia during the COVID-19 pandemic still had low levels of learning

motivation [14-15]. The same is true for independent learning. The success of the established learning objectives in the online learning process depends on independent learning. According to the initial survey, elementary school kids' learning independence in the online learning process received an average score of 55.89. This demonstrates how little learning independence Indonesian primary school children possess. This fact is further reinforced by the findings of the literature study that the researchers conducted, which revealed that primary school pupils' levels of learning independence during the COVID-19 epidemic were still considered to be poor [16-17].

This issue served as the inspiration for the design of the digital classroom learning model based on local wisdom. Therefore, more study is required to determine whether the local wisdom-based digital classroom learning model has an impact on primary school kids' learning motivation and independence. No other researchers have ever conducted this study. According to Jena's (2013) research, which is related, digital classroom learning has an impact on junior high school students learning outcomes [18]. According to the study's findings, students who took classes online learned more than those who studied in traditional classroom settings. According to research by Ozerbas & Erdogan (2016), junior high school students learning outcomes and self-efficacy are positively impacted by digital classroom learning [19]. According to the study's findings, junior high school students learning outcomes and self-efficacy perceptions improved when they took online courses. The learning activities of high school students are impacted by digital classroom learning, according to research by Ramadhani et al. (2019) [20]. According to the study's findings, students who took classes online were more active than those who used traditional learning methods. The research is to ascertain the impact of the digital classroom learning model based on local wisdom that has been produced on learning motivation and learning independence for the rest of primary school, as can be observed through this research.

2 Method

This study is an experimental study [43]. 100 Indonesian elementary school children in grade 3 participated in this study. The experimental class had 50 students overall, while the control class also had 50 students. This study was done to address three questions, namely:

1. Is there a significant difference in learning motivation between students who use a digital classroom learning model based on local wisdom with students who use online learning?
2. Is there a significant difference in learning independence between students who use digital classroom learning models based on local wisdom and students who use online learning?
3. Is there a significant relationship between students' learning motivation and learning independence using a digital classroom learning model based on local wisdom with students using online learning?

Employing a 30-question survey to measure the primary school kids' motivation to learn. The experts have deemed the questionnaire to be feasible and have tailored it to the indicators of learning motivation. A questionnaire with 30 questions will be used to measure learning independence in elementary school. The experts have deemed the questionnaire to be feasible

and have tailored it to the indicators of learning motivation. The SPSS 26 application, which included a prerequisite test made up of a normality test and a homogeneity test, was used to carry out the data analysis technique [44]. Testing of hypotheses using the Spearman-rho correlation test, the paired sample t-test, and the independent sample t-test.

3 Result and Discussion

Following a 4-month treatment period for each class, measurements were taken. The control class received treatment using a traditional online learning model, while the experimental class received treatment using a digital classroom learning model based on local wisdom. Students were given a questionnaire evaluating their learning motivation and independence after four months. The following table shows the findings of data tabulation on elementary school pupils' motivation for learning:

Table 1. Data Recapitulation of Learning Motivation of Elementary School.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Experiment	50	53	63	58.42	3.471
Post-test Experiment	50	83	100	94.08	5.205
Pre-test Control	50	53	60	55.00	2.740
Post-test Control	50	57	63	60.48	1.951
Valid N (listwise)	50				

Table 1 shows that the experimental class employing the local wisdom-based digital classroom learning model had an average pre-test score of 58.42 and an average post-test score of 94.08. Then, the table below shows the statistics summary for elementary school students' learning independence:

Table 2. Data Recapitulation of Learning Independence of Elementary School.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Experiment	50	53	63	59.32	4.108
Post-test Experiment	50	83	100	94.80	4.536
Pre-test Control	50	50	60	54.26	3.416
Post-test Control	50	57	67	61.12	3.685
Valid N (listwise)	50				

The average pre-test score for the experimental class using the local wisdom-based digital classroom learning model was 59.32, and the average post-test score for the experimental class using the local wisdom-based digital classroom learning model was 94.80, as can be seen in table 2. These two numbers are used to perform further measurements

3.1 Normality test

To ascertain whether the data is regularly distributed, the normality test calculation is performed. The Kolmogorov-Smirnov test and the Shapiro-Wilk test are used in this calculation. The outcomes are displayed in the following table:

Table 3. Normality Test Results of Learning Motivation.

Tests of Normality							
	Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Learning Motivation	Pre-test Experiment	.196	50	.530	.870	50	.560
	Post-test Experiment	.313	50	.186	.831	50	.510
	Pre-test Control	.387	50	.370	.690	50	.554
	Post-test Control	.297	50	.431	.786	50	.417
a. Lilliefors Significance Correction							

Table 3 shows that the Kolmogorov-Smirnov test and the Shapiro-Wilk test both received scores larger than 0.05 for the value of sig in each class group. This demonstrates that learning motivation class groups are evenly distributed. Additionally, the learning independence data's normality test was performed. The outcomes are displayed in the following table:

Table 4. Normality Test Results of Learning Independence.

Tests of Normality							
	Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	df	Sig.
Independent Learning	Pre-test Experiment	.335	50	.146	.746	50	.601
	Post-test Experiment	.286	50	.365	.829	50	.400
	Pre-test Control	.284	50	.561	.849	50	.150
	Post-test Control	.259	50	.453	.827	50	.400
a. Lilliefors Significance Correction							

Table 4 shows that the Kolmogorov-Smirnov test and the Shapiro-Wilk test both received scores larger than 0.05 for the value of sig in each class group. This demonstrates that each class group is evenly distributed for independent learning

3.2 Hypothesis 1

H01: There is no difference in the learning motivation of elementary school students who use Local wisdom-based digital classroom learning models and those who use conventional online learning models.

Both a paired sample t-test and an independent t-test were used to find the answer to the question. The measurement, which makes use of the paired sample t-test, aims to determine whether or not the local knowledge-based digital classroom learning model has an impact on elementary school pupils' learning motivation. The following table displays the computation results:

Table 4. Normality Test Results of Learning Independence.

		Mean	Std. Error Mean	Paired Differences		t	df	Sig. (2-tailed)
				95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	Pre-test Experiment - Post-test Experiment	-35.660	.917	-37.502	-33.818	-38.897	49	.000
Pair 2	Pre-test Control - Post-test Control	-5.480	.421	-6.326	-4.634	-13.013	49	.000

Table 5 in the output pair 1 shows that the value of Sig (2-tailed) returns a result of 0.00, demonstrating that it is less than 0.005. These results demonstrate a difference between the experimental class's average pre-test and post-test in terms of their learning motivation. Additionally, pair 2's results yielded a Sig (2-tailed) value of 0.00, demonstrating that it is less than 0.005. These results demonstrate that there is a difference between the average pre-test and post-test of the control class's learning motivation.

The homogeneity test is the next. The goal of the homogeneity test is to identify whether all of the data have the same variance. Based on the measurement findings, it can be said that the data have the same variance because the Mean value is 0.866 larger than 0.05. Additionally, the test using independent samples was performed. This experiment attempts to determine whether elementary school students' learning motivation differs between conventional online learning models and a digital classroom learning model based on local wisdom. The following table displays the test results:

Table 6. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper

Learning Motivation	Equal variances assumed	52.914	.000	42.740	98	.000	32.040	35.160
	Equal variances not assumed			42.740	62.498	.000	32.029	35.171

The value of sig (2-tailed) 0.00 is less than 0.05, as can be shown in table 6. This demonstrates that elementary school students who learn using the digital classroom model have different average levels of learning motivation than elementary school students who learn using conventional online learning models. The average difference, which can be seen in the accompanying table, also supports this:

Table 7. Average Post-Test Value of Experimental Class and Control Class.Group Statistics

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Learning Motivation	Post-test Experiment	50	94.08	5.205	.736
	Post-test Control	50	60.48	1.951	.276

Table 7 shows that the experimental class's average post-test score is 94.08, which is greater than the control class' average post-test score of 60.48. This demonstrates how the digital classroom model, which is based on local wisdom, can boost Indonesian elementary school kids' learning motivation

3.3 Hypothesis 2

H02: There is no difference in the learning independence of elementary school students who use local wisdom-based digital classroom learning models with elementary school students who use conventional online learning models.

Both the paired sample t-test and the independent t-test were used to evaluate the hypothesis. The paired sample t-test is being used to examine whether or not elementary school kids' learning independence is impacted by the local wisdom-based digital classroom learning model. The following table displays the computation results:

Table 8. Paired Sample T-Test For Student Learning Independence

		Paired Differences				t	df	Sig. (2-tailed)
		Mean	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	Pre-test Experiment - Post-test Experiment	-35.480	6.332	-37.279	-33.681	-39.623	49	.000
Pair 2	Pre-test Control - Post-test Control	-6.860	4.150	-8.039	-5.681	-11.688	49	.000

The value of Sig (2-tailed) receives a result of 0.00 in table 8 in the output pair 1, demonstrating that it is smaller than 0.005. These results demonstrate that there is a discrepancy between the experimental class's post-test and the experimental class's pre-test of learning independence. Additionally, pair 2's results yielded a Sig (2-tailed) value of 0.00, demonstrating that it is less than 0.005. These results demonstrate that there is a difference between the typical learning independence pre-test and post-test in the control class.

The homogeneity test is the next. The goal of the homogeneity test is to identify whether all of the data have the same variance. It is clear from the measurement findings that the data have the same variance because the mean value of 0.303 is greater than 0.05. Additionally, the test using independent samples was performed. This study intends to determine whether primary school pupils who use a digital classroom learning model based on local wisdom differ from those who utilize conventional online learning models in terms of their learning independence. The following table displays the test results:

Table 9. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Learning Independence	Equal variances assumed	1.072	.303	40.754	98	.000	32.040	35.320
	Equal variances not assumed			40.754	94.054	.000	32.039	35.321

The value of sig (2-tailed) 0.00 is less than 0.05, as can be shown in table 9. This demonstrates that there is a difference between elementary school kids who learn using conventional online learning models and primary school students who use digital classroom learning models based on local wisdom. The average difference, which can be seen in the accompanying table, also supports this:

Table 10. Independent Samples Test

Group Statistics					
	Class	N	Mean	Std. Deviation	Std. Error Mean
Independent Learning	Post-test Experiment	50	94.80	4.536	.641
	Post-test Control	50	61.12	3.685	.521

Table 10 shows that the experimental class's average post-test score is 94.80, which is greater than the control class' average post-test score of 61.12. This demonstrates how the digital classroom model based on local wisdom might help Indonesian elementary school pupils become more independent learners

3.4 Hypothesis 3

H03: There is no significant relationship between student learning motivation and learning independence using a digital classroom model based on local wisdom with students using conventional online learning.

Calculations utilizing the Spearman Rho correlation test will be used to provide answers to these queries. The following table displays the computation results:

Table 11. Results of Spearmans Rho Test

Correlations			Learning Motivation	Independent Learning
Spearman's rho	Learning Motivation	Correlation Coefficient	1.000	.978**
		Sig. (2-tailed)	.	.000
		N	50	50
	Independent Learning	Correlation Coefficient	.978**	1.000
		Sig. (2-tailed)	.000	.
		N	50	50
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 11 shows that the significance value, or sig (2-tailed), is smaller than 0.05, with a value of 0.978. This demonstrates that among primary school kids, there is a relationship between learning motivation and learning independence. From the table, it is also clear that there is a significant correlation between primary school kids' learning motivation and learning independence, with a correlation coefficient of 0.978. When the correlation coefficient value is positive, it means there is a one-way relationship. This shows that primary school kids' learning independence increases in direct proportion to their learning motivation.

This study investigates how elementary school students learning motivation and independence are affected by the digital classrooms model based on local wisdom. According to the study's findings, digital lessons based on local wisdom had an impact on elementary school pupils' learning motivation and independence. This study also discovered a relationship between Indonesian elementary school kids' learning independence and motivation. The discussion that follows focuses on further explanation

3.5 Discussion for Influence of local wisdom-based digital classroom model on learning motivation

According to the study's findings, elementary school pupils' motivation to learn is influenced by the digital classroom model based on local wisdom. Compared to students who study using conventional online learning models, those who study using a digital classroom model based on local wisdom have higher levels of learning motivation. Previous studies have validated this finding. According to research done by Xu and Jaggars (2013), the online learning process can enhance the quality of students' learning [21]. Online learners are highly motivated to learn to raise the standard of their education. According to Chen & Jang's (2010) research, online education can boost students' motivation to learn. Students that study online have a strong desire to learn and can dig deeper into topics [22]. According to research by Dong, Cao, and Li (2020), students who study online are more engaged than those who learn face-to-face. According to a study by Gray & DiLoreto (2016), students who study online are more likely to become actively involved in their education, which in turn encourages them to learn more effectively [23]. These study's findings add to the body of knowledge. The findings of this study suggest that a digital classroom model created by merging components of local wisdom can boost Indonesian primary school pupils learning motivation.

Online learning and digital classroom learning essentially mean the same thing. However, a learning environment that resembles a traditional classroom is presented in the digital classroom. Interaction between students, teachers, and other learning tools is possible. Local wisdom was combined in the development of this online classroom learning. The parts of local wisdom used are related to the culture surrounding the students. There are various reasons why the local wisdom-based digital classroom learning paradigm has an impact on learning motivation. The technology that primary school kids choose to use was used to create the digital classroom learning model based on local wisdom. Students have access to this learning through computers, smartphones, and laptops [24-26]. Students typically use this device to play games. Students frequently believe that this device is exclusively for playing games. Researchers hope that by using this device, pupils will be engaged in learning due to this model. Students have the opportunity to learn at any time and from any location due to this local wisdom-based digital classroom model. The choice to learn according to one's circumstances is provided to students. The option to select the content they wish to master is also granted to the students, provided that they do so within the constraints of the predetermined schedule. Students have the option to select the lessons they want to master due to this method. This is following the idea that giving primary school kids more independence during the learning process will improve the standard of learning. Then, by incorporating a contextual approach, the digital classroom learning model based on local wisdom also integrates cultural components in the surroundings of pupils. For students in elementary school, the contextual approach is the best strategy [27-29]. It pleases pupils' interest in the subject matter by exposing aspects of the local cultures.

3.6 Discussion for Influence of local wisdom-based digital classroom model on learning independence

According to the study's findings, elementary school pupils' learning independence is influenced by the digital classroom model based on local wisdom. In comparison to students who study with conventional online learning models, those who study with a digital classroom model based on local wisdom show higher levels of learning independence. Previous studies have validated this finding. According to Hodges' (2008) research, students' self-efficacy may be impacted by online learning [30]. Online learners will be able to motivate themselves to study independently, which will have an impact on self-efficacy. According to Cleveland-Innes & Campbell's (2012) research, online learning offers less stressful learning opportunities so that students can pursue independent learning [31]. According to research was done by Song et al. (2004), learning can improve students' perspectives of the learning process [32]. The quality of learning can be improved by the fact that online learners can alter their minds and can study on their own whenever and wherever they want. According to research by Michinov et al. (2011), online learning has the power to engage students in the learning process. Compared to students who study face-to-face, online learners tend to be more engaged [33]. The results of this study differ from those of the other studies. According to the study's findings, learning in a digital classroom that incorporates components of local wisdom can help Indonesian students in primary school become more independent learners.

Learning independence is crucial right now [34]. The ability to learn independently must be cultivated from an early age so that kids feel accountable for the learning process they are going through. There are various reasons why employing a digital classroom learning model based on local wisdom can help students in elementary school become more independent learners. The local wisdom-based digital classroom learning model is made to be as appealing and simple as possible so that students can feel at ease during the learning process. The learning resources presented by this local wisdom-based digital classroom learning paradigm present issues. These issues demand that students be able to resolve them. Although the pupils are permitted to incorporate their surroundings into this solving process, it is done independently. Students are free to work through issues involving their siblings, parents, teachers, peers, and real-world and online references. Students are motivated to learn independently when they can solve difficulties on their own [35-36]. Students will be expected to identify the appropriate solution to each problem and how it might be implemented as they go through these problems. To ensure that the solutions chosen are appropriate for use, determining this solution demands initiative and critical thinking skills. Decision-making, initiative, and critical thinking processes are what can enhance a student's capacity for independent learnings

3.7 Discussion for Relationship between learning motivation and learning independence

According to the results, learning motivation and learning independence is strongly positively correlated with one another in elementary school students. This demonstrates that a student's learning independence increases with their learning motivation. Students' encouragement to reach their learning objectives is known as learning motivation [37]. Students must be motivated learn to accomplish their learning goals. Learning motivation, according to numerous earlier studies, can enhance the quality of students' learning [38]. Students in elementary school, as well as other students, benefit greatly from learning motivation [39]. The future generation's pioneers are those in elementary school. If basic education is correctly run, it will be simpler for pupils to move on to the next level and apply the knowledge they have learned. As a result, elementary school students must increase their motivation for learning.

According to the study's findings, learning independence was impacted by learning motivation. This is because motivating students to want to learn has led to the development of learning independence. This urge is a component of motivation. Learning independence is a process that involves students participating in their initiative, making their own decisions, and taking ownership of their learning [40]. This suggests that when there is encouragement (motivation) from pupils, learning independence exists. Students must be able to learn independently to assume responsibility for their actions while they are learning [41]. If pupils believe there is a need that must be met by effort, then this obligation will arise. To meet these goals, students' responsibility for that process calls for strong motivation.

Learning independence is an effort made by students to learn without relying on others [42]. Students must be able to assume responsibility for decisions about the learning process they engage in to acquire learning independence. Few students are capable of taking accountability for their learning outcomes. Due to the internal and external support, students encounter, only students with a strong desire to reach these goals exist. Motivation is the term for this urge. Additionally, if students can encourage themselves to be able to complete the learning process independently, learning independence will rise. Independent learning is challenging, especially for young children in elementary school. Students cannot be directly taught independent learning. For elementary students to promote independent learning, teachers can encourage them to be excited about learning.

4 Conclusion

The findings of this study suggest that employing a digital classroom model based on local wisdom has an impact on Indonesian elementary school students' motivation to learn. When compared to students who learn using conventional online learning models, students who use digital classroom learning models based on local wisdom show higher levels of learning motivation. This study demonstrates that employing a digital classroom model based on local wisdom has an impact on Indonesian elementary school students' learning independence. In comparison to students who study using conventional online learning models, students who use a digital classroom learning model based on local wisdom exhibit higher levels of learning independence. This study also demonstrates that for elementary school students, there is a strong positive (unidirectional) relationship between learning motivation and learning independence. This demonstrates that a student's learning independence increases with their learning motivation.

Acknowledgments

Thank you to the Universitas Samudra for providing funding support for this research through decree No. 224/UN54/P/2022 and work agreement letter No. 50/UN54.6/PCP/2022.

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