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The influence of educational technology integrated curriculum using participatory learning to strengthen elementary education policies

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Abstract

The purpose of this study was to determine the effect of the educational technology curriculum using participatory learning to strengthen basic education policies. The problem analysis is 1) the curriculum implemented in schools has not been integrated with learning technology, 2) not all school visions and missions fully support visionary characteristics using technology or digital, 3) lack of availability of supporting facilities and infrastructure for learning technology, 4) lack of awareness of school residents (students, teachers, employees, alumni, stakeholders, madrasah committees) in carrying out learning activities using educational technology. The paradigm used with constructivism theory in the form of a qualitative and quantitative approach with a descriptive narrative method using path analysis. This study involved (N) 60 respondents at the elementary education level. The results of the study explain the existence of a significant positive influence from the coefficient table obtained a significance value between the curriculum (X1) 0.352> 0.005 with t_count 0.398> t_table 0.2144 on educational technology (X2) 0.236> 0.005 with t_count 1.198> 0.2144 using participatory learning (Y) 0.264> 0.05 with t_count 0.493> 0.2144 on strengthening basic education policies (Z) can be said to be accepted. So that the results of the study can be recommended to strengthen the curriculum with the need for integration of educational technology.

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Keywords

Curiculum, Educational technology, Participatory learning

Introduction

Sustainable development programs have become a shared commitment and responsibility for the world community [1-2]. Especially in the field of education with the integration of technology in education which refers to the use of technology to improve students' learning experiences [3-4]. Utilizing various types of technology in the classroom in the learning process, for example with virtual classes, automatically

creates students who are actively involved in supporting the growth of students' critical thinking [5].

Curriculum integration in technology is a continuous movement to teach and facilitate teachers in emphasizing the relationship between subjects, but still paying attention to the characteristics of each subject area. The integration of technology in question is the conscious and planned combination or use of technology in the learning process in the classroom [6]. Technology integration in learning can take the form of using software [7], hardware, and various other digital tools [8]. The impact of curriculum integration with technology is that it can create an environment that allows students to be active in the learning process, create knowledge independently, and participate in the learning process constructively [9]. In order to realize constructive curriculum integration with technology, not all schools have implemented it. This has led to a problem analysis, namely: 1) the curriculum applied in schools in subject matter is not all integrated using learning technology [9-10], 2) Not all schools vision and mission statements fully support the visionary characteristics of using technology or digital [12], 3) lack of availability of supporting infrastructure for learning technology [13], 4) lack of awareness among school residents (students, teachers, employees, alumni, stakeholders, madrasa committees) in carrying out learning activities using educational technology [12-13]. This article aims to determine the influence of curriculum on educational technology using participatory learning to strengthen basic education policies.

Curriculum Integration with Educational Technology

Technological developments have changed human thought patterns and life ethics. [13-14], including in the educational dimension. The use of technology in the educational process has become a focus in efforts to improve the quality of students and educators in learning [18]. In today's digital era, technology has become a consumption of all dimensions that can no longer be separated from a person's life. [19] especially the world of education for students and educators. Where technology not only changes the way we communicate and work [20], but also provides new opportunities in the way students learn and teach.

Curriculum integration with educational technology has become a major focus for many educational institutions around the world [21]. This is due to the potential of technology to improve the quality of human resources, make the learning process more effective and interactive, and prepare students [22], to face the challenges of 21st century learning. In this context, the opportunities for benefits and advantages for educational institutions to change policies, especially at the elementary education level, to use educational technology as the right solution to solve problems in learning, while challenges refer to obstacles and problems that may arise during the integration process [12]. By understanding these two aspects, it is hoped that effective strategies can be determined to optimize the use of educational technology in the curriculum.

Research Methodology

This research uses a constructivism paradigm with a qualitative approach [20-21] descriptive narrative method data collection technique with literacy studies, interviews, and questionnaire distribution with a target of 60 respondents, MI/SD principals in Magelang Regency with the following respondent classifications (Table 1).

Table 1. Respondent classification

School	The Numbers of Respondent	
	Principal/ Vice Principal	%
Private of MI	43	72
State of MI	6	10
Private of Elementary school	1	2
State of Elementary school	10	17
Total	60	100

Result and Discussion

The purpose of this study is to determine the influence of curriculum construction on educational technology using participatory learning to strengthen basic education policies. There are two purposes why schools must be ready with curriculum integration with learning technology; 1) adopting a curriculum management system with critical thinking learning for students using technology as part of educational excellence [25], 2) changing the way students view interacting participatively with learning materials using learning technology as a search for audio-visual sources that can actually inspire the mindset of educators and students to think contextually [26]. This research focuses on two variables, namely the dependent variable of curriculum with technology and the independent variable of participatory learning.

At this stage, the path coefficients of model 1 and path coefficients of model 2 will be calculated, with the following stages:

Path coefficient of model 1

1. Referring to the regression output of model 1 in the coefficients section, it can be seen that the significance value of the two variables, namely X1: 0.000 and X2: 0.000, is smaller than 0.05. This result provides the conclusion that the regression model 1, namely variables X1 and X2 have a significant effect on Y.
2. The value of r-square in the model summary table is 0.766, this shows that the contribution of the influence of X1 and X2 to Y is 76.6% while the remaining 23.4% is the contribution of other variables not included in the study. Meanwhile, the value of e1 can be found using the formula =$\sqrt{}$ (1-0.766 = 0.483. Thus, the path diagram of model 1 is obtained in Figure 1. The result path model, result model summary and result anova model summary of coefficient 1 consecutively in Table 2-4.

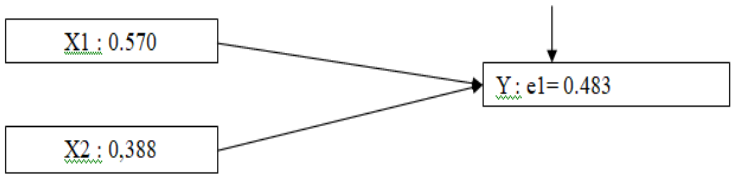

Figure 1. The path diagram of model 1

Table 2. The result path model coefficient 1

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1(Constant)	0.814	2.498		0.326	0.746
Curriculum with Technology	0.814	0.122	0.570	6.692	0.000
Participatory Learning	0.570	0.125	0.388	4.561	0.000

a. Dependent Variable: Participatory Learning Activities

Table 3. The result model summary of coefficient 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.875[a]	0.766	0.758	1.53994

a. Predictors: (Constant), Curriculum with Technology and Participatory Learning

Table 4. The result anova model summary of coefficient 1

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	443.162	2	221.581	93.438	0.000[b]
	Residual	135.171	57	2.371		
	Total	578.333	59			

a. Dependent Variable: Curriculum with Technology
b. Predictors: (Constant), Participatory Learning

Path coefficient of model 2:

1. Based on the regression output of the path II model in the Coefficients table section, it is known that the results of the significance values of the three variables, namely X1: 0.352, X2: 0.236, and Y: 0.624 are greater than 0.005. These results indicate that the path II model, namely variables X1, X2 and Y, has a positive effect on Z.
2. The value of r-square in the model summary table is 0.233, this shows that the contribution of X1, X2 and Y to Z is 23.3% while the remaining 76.7% is the contribution of other variables that are not studied. While for the value of e2 = $\sqrt{}$ (1-0.233) = 0.8757. Thus, the path diagram of model 2 is obtained in Figure 2. The result path model, result model summary and result anova model summary of coefficient 2 consecutively in Table 5-7.

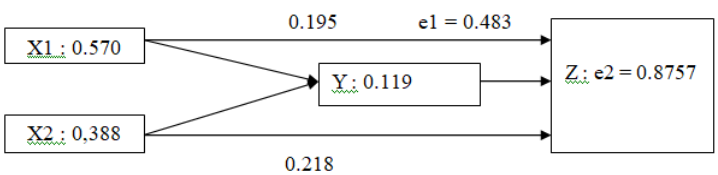

Figure 2. The path diagram of model 2

Table 5. The result path model coefficient 2

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.623	3.314		3.508	0.001
	Curriculum	0.202	0.215	0.195	0.938	0.352
	Technology	0.232	0.193	0.218	1.198	0.236
	Participative learning	0.087	0.176	0.119	0.493	0.624

a. Dependent Variable: Participative learning

Table 6. The result model summary of coefficient 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.483[a]	0.233	0.192	2.04054

a. Predictors: (Constant), Curriculum with Technology, Participatory Learning

Table 7. The result anova model summary of coefficient 2

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	71.010	3	23.670	5.685	0.002[b]
	Residual	233.173	56	4.164		
	Total	304.183	59			

a. Dependent Variable: Curriculum with Technology
b. Predictors: (Constant), Participatory Learning

Hypothesis Testing Stage

1. Analysis of the influence of X1 on Y: from the analysis above, the significance value of X1 is 0.000 < 0.05, so it can be said that there is a direct significant influence of X1 on Y.
2. Analysis of the influence of X2 on Y: from the analysis above, the significance value of X2 was obtained as 0.000 < 0.05, so it can be said that there is a direct significant influence of X2 on Y.
3. Analysis of the influence of X1 on Z: from the analysis above, the significance value of X1 is 0.352 > 0.05, so it can be said that there is a direct significant influence of X1 on Z.
4. Analysis of the influence of X2 on Z: from the analysis above, the significance value of X2 was obtained as 0.236 > 0.05, so it can be said that there is a direct significant influence of X2 on Z.
5. Analysis of the influence of Y on Z: from the analysis above, the significance value of X2 is 0.624 > 0.05, so it can be said that there is a direct significant influence of Y on Z.
6. Analysis of the influence of X1 through Z: it is known that the direct influence given by X1 to Y is 0.195. Meanwhile, the indirect influence of X1 through Y to Z is the multiplication of the beta value of X1 to Y with the beta value of Y to Z, namely: 0.570 x 0.119 = 0.067. So the total influence given by X1 to Z is the direct influence plus the indirect influence, namely: 0.195 + 0.067 = 0.262. Based on the results of the fit as calculation, it is known that the direct influence value is 0.195 and the indirect influence is 0.067, which means that the indirect influence value is smaller than the direct influence. These results indicate that indirectly X1 through Y has a significant influence on Z.

7. Analysis of the influence of X2 through Y on Z: it is known that the direct influence given by X2 on Y is 0.218. While the indirect influence of X2 on Y is the multiplication of the beta value of X2 on Y with the beta value of Y on Z, namely: 0.388 x 0.119 = 0.046. So, it is known that the total given by X2 on Z is the direct influence plus the indirect influence, namely: 0.218 + 0.046 = 0.264. Based on the calculation results above, the direct influence value is 0.218 and the indirect influence is smaller by 0.046 than the direct influence. These results indicate that indirectly X2 through Y has a significant influence on Z.

Path Analysis Coefficient Curve

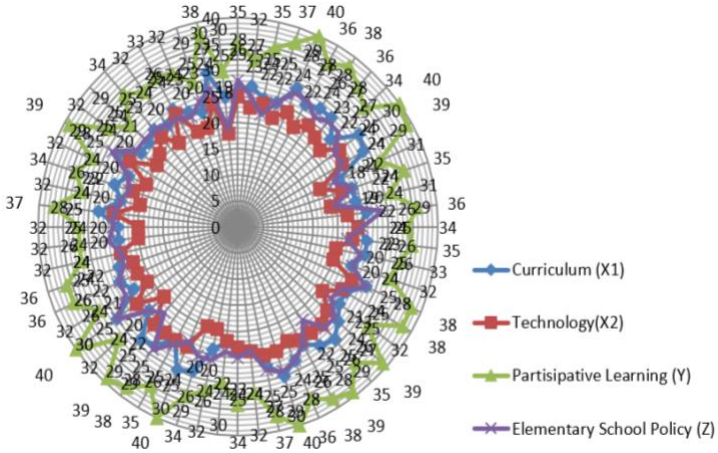

Figure 3. The result of analysis coefficient curve

Conclusion

Based on the results of the discussion, it is explained that there is a positive and significant influence of the table coefficient, the significance value obtained between the Curriculum is 0.352> 0.005 with a t_count of 0.398> t_table 0.2144 and the Technology Integrated Curriculum 0.236> 0.005 with a t_count of 1.198> 0.2144 on Participatory Learning 0.264> 0.05 with a t_count of 0.493> 0.2144 for the influence of the Curriculum with Technology that uses participatory learning can strengthen basic education policies, so that the results of the study can be recommended to strengthen the curriculum with the need for educational technology integration.

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