

THE IMPLEMENTATION OF *ICT* BASED LEARNING MEDIA (*INFORMATION AND COMMUNICATION TECHNOLOGY*) TO INCREASE STUDENTS' LEARNING OUTCOMES IN THEMATIC LEARNING OF THE SIXTH GRADE MI AL-ABROR IN ACADEMIC YEAR 2021/2022

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ABSTRACT

The teaching and learning process in school is the main thing that must be done by every teacher in creating good students. But in reality, there are several factors make the students feel bored and not enthusiastic in the learning process, the expertise of the teacher is very decisive as the cause.

Based on the result of initial observations, the implementation of the thematic learning process for The Sixth Class in Theme 3 Subtheme 2 Learning 1, had not been maximized because the teacher only used conventional methods, while students only continued to listen to the teacher's explanation of the material being taught, this could make the students bored and lazy to receive lessons so that it had an impact on the low learning outcomes of students.

The Objective of this study was to determine the implementation of *ICT*-based learning media (Information and Communication Technology) for the Thematic Learning of the sixth grade MI Al-Abror Mojokerto in academic year 2021/2022, and to find out how the implication of *ICT*-based learning media (information and communication technology) can improve the results of student learning in the Thematic Learning for the sixth grade MI Al-Abror Mojokerto in academic year 2021/2022.

The type of this research is field research with a descriptive quantitative approach. This study also used an experimental method, namely Quasi experimental design. The subject of this research was 34 students of the sixth-grade A which is used to be an experimental class, and 35 students of the sixth-grade B which is used to be a control class. Object of this research was the effectiveness of using *ICT*-based media in terms of the results of Thematic Learning. Data collection techniques in this study were tests, observations, interviews and documentation. The data analysis technique used descriptive statistics. Based on the results of data analysis, it was concluded that *ICT*-based media is very effective in improving of the results of thematic learning abilities.

Keywords: *ICT*-Based Learning Media, Thematic Learning.

INTRODUCTION

Human in their life always get various changes, especially because of their experiences, knowledges, and also interests. Therefore, the knowledge possessed by human is always dynamic in line with the passage of time and their needs. In this case, there is a process that called education, and the education continues as long as the human is alive and aware of his existence in an environment. Because of that, so the concept of long-life education is very important in human life

Education is the way to create good situation in teaching and learning process, in order the students be active in increasing their self-potential, especially in having power of religious spiritual, good character, good behavior, and other talents that needed to live in society.

education is defined as the process of changing attitudes and behavior of a person or group of people in an effort to mature humans through teaching and training efforts. According to Ki Hajar Dewantara, education is a demand in the life of the growth of children, as for the meaning of education guiding all the natural forces that exist in children, so that they are as human and members of society can seek the highest happiness and safety

Research Method

1. Type of the research

The research of the effectiveness in using *ICT*-based media (*Information and Communication Technology*) in thematic learning for students of the sixth MI Al-Abror, the approach used is quantitative with descriptive analysis. Research with quantitative emphasis on the analysis of numerical data (numbers) which is processed by statistical methods.

This research used quasi experimental research) and type of research is field research, which aimed to test the effectiveness of *ICT*-based media (*Information and Communication Technology*) on thematic learning. Experimental research is a study that required researchers to manipulate and control one or more independent variables and observe the dependent variable, to see the difference or a study that look at the causal relationship to two or more variables by giving treatment to the experimental group. To see the effect, the experimental group that was treated was compared with the group that was not treated, this group is alled the control group.

This Research used Quasi experimental design; it was a development of true experimental design.

This research used nonequivalent control group design. This design was almost same with pretest-posttest control group design, only in this design, experiment group and control group not be chosen randomly.

In this research, pretest was given before giving experiment to know the initial state, so the result after giving treatment could be known and

more accurate because it could compare with the situation before being treated. This design could be described as follows:

Table 1. Quasi experimental

Kelompok	Pretes t	Perla-kuan	Post-test
Eksperi-men	T ₁	X	T ₁
Kontrol	T ₂	-	T ₂

Keterangan:

T₁ : Test before giving treatment.

X : treatment of experiment class

by using *-ICT* based media

T₂ : Test after giving treatment

2. Time and Place of Research

This research was conducted in two classes, first class (VI A) became experiment group and second class (VI B) became control group. In this research, there were three stages of activities carried out including pretest learning, treatment, and the last was posttest.

Two research groups were given a pretest to determine the extent of the initial knowledge of the initial abilities possessed by two classes. Besides, two classes also were given different learning, the experimental group was given treatment using *ICT*-based learning media, while the control group was only given word cards as often applied by teachers in the Thematic learning process. The last stage, these two groups were given a posttest to determine their learning outcomes.

This research was conducted in the first semester of the academic year 2021/2022. Time of the research started on 20th of August 2021 until 15th of September.

This research was conducted in MI Al-Abror Wonorejo, Trowulan-Mojokerto. The choice of this school as a place of research because at this school, there was not research conducted by using *ICT*-based media (*Information and Communication Technology*) in class VI Thematic learning, and from the school, both the head of the headmaster and the entire board of teachers gave a positive response to the research by experimental method at the madrasa.

3. Population and Sample of the

Research

The population in this study were all students of MI Al-Abror for the academic year 2021/2022 with a total of 346 students, consisting of 176 boys and 170 girls.

Kelas	Laki-laki	Perempuan	Jumlah
I	24	19	43
II	26	24	50
III	37	44	81
IV	32	28	60
V	22	21	43
VI	35	34	69
Jumlah	176	170	346

Table 2. Distribution of Total Research Population

The sample used in this study was a group that already existed in the population and two classes were selected, namely students of class VI A Al-Abror, totaling 35 students and class VI B, totaling 34 students. The class that received treatment was class VI A or the experimental class that used ICT-based learning media, while the class that did not get treatment was class VI B or called the control class using word cards. The researcher chose class VI A and VI B as the research sample based on the criteria for medium ability, based on recommendations from the principal and teacher, and considered to be able to provide an overview of the thematic learning conditions carried out by the teacher at the school.

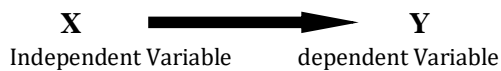
Kelas	Laki-laki	Perempuan	Jumlah
VI A	17	17	34
VI B	18	17	35

Table 3. Distribution of Total Research Sample

4. Research Variable

There were two types of variables in this study, namely the independent variable and the dependent variable. The independent variable in this study was the effectiveness of *ICT*-based media (X), while the dependent variable was thematic learning on the learning outcomes of class VI MI Al-Abror (Y).

The relationship between the two variables can be seen in the following scheme:



SCHEME

Note:

X : The effectiveness of using media

ICT

Y : thematic learning of learning

outcomes the sixth class MI Al-

Abror

5. Research Instruments

The research instruments were test, observations, and interviews. The test was conducted in the form of pretest and posttest. This test data is used as a reference to measure success after being given treatment and the data is also used to draw conclusions at the end of the study.

The observation sheet was used as a tool to make observations or observations in order to obtain data about the description of the implementation of learning using *ICT*-based learning media in the thematic learning of class VI MI Al-Abror.

Interviews were conducted with the aim of obtaining information or data. Interviews were also used to compare and match words, behaviors, actions, research subjects with actual learning. In this study, interview techniques were used to dig up information about the brief history of the establishment of MI Al-Abror, the vision and mission of MI Al-Abror, the state of MI Al-Abror's facilities and infrastructure, the condition of teachers and students at MI Al-Abror.

This interview was conducted to the Headmaster and also to the teachers with the aim of obtaining valid data.

6. Data analysis technique

In this study, several data analysis techniques were used which were intended to find answers to the researcher's questions about the problems formulated previously. Some of the techniques include:

a. Observational Data Analysis

The data obtained through observation sheets on the implementation of thematic learning using ICT-based learning media were analyzed descriptively quantitatively.

The number of items for the observation sheet instrument for teacher and student activities in learning using ICT-based media are 14 statements each. Means the score was $14 \times 1 = 14$ and the highest score is $14 \times 4 = 56$.

The formula for finding the percentage score for the application of the use of ICT-based learning media is as follows:

$$\text{Persentase} = \frac{\text{Jumlah skor yang diperoleh}}{\text{Skor maksimal}} \times 100 \%$$

The success of the learning process of teachers and students, then the value is classified with the following categories:

Tingkat Keberhasilan	Predikat Keberhasilan
86 – 100 %	Sangat tinggi
71 – 85 %	Tinggi
56 – 70 %	Sedang
41 – 55 %	Rendah
< 40 %	Sangat Rendah

Table 4. Classification of the Success Level of the Teacher and Student Learning Process

b. Test Result Analysis

Thematic ability test data obtained through the pretest and posttest which will be analyzed using descriptive statistics and analytic statistics using SPSS version 22 for windows. Data analysis was carried out through the following stages:

1. Mean

Qualification of the value of students' critical thinking skills obtained through the final test can be known through the average formulated by:

$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$$

Note :

\bar{x} = mean

$\sum f_i x_i$ = Number of

multiplication results
 between each
 data with
 frequency

$\sum f_i$ = Amount of data

2. Standard Deviation

The standard deviation or standard deviation of the sample is used in calculating z_i in the normality test. The formula used is as follows:

$$s = \sqrt{\frac{\sum f_i (x_i - \bar{x})^2}{n - 1}}$$

Keterangan:

S = Varians sampel

$\sum f_i$ = Number of
 frequencies
 i data, which one
 $i=1,2,3..$

x_i = the date (i), $i = 1,2,3$

\bar{x} = mean

n = Amount of data

3. Variance

Sample variance is used in calculating the homogeneity test and t test. To calculate the sample variance, the formula is used:

$$s^2 = \frac{\sum f_i (x_i - \bar{x})^2}{n - 1}$$

Note:

S^2 = Sample variance

$\sum f_i$ = Amount of data

x_i = the data (i), $i = 1, 2, 3$

\bar{x} = mean

n = Amount data

RESULTS AND DISCUSSION

1. Data Presentation

In this study, researchers used several ICT-based learning media to improve student learning outcomes in the sixth Class of thematic learning at MI Al-Abror Mojokerto for the 2021/2022 academic year, namely:

a. Parallel Circuit Learning Videos

The first media used is a learning video. This is used at the beginning of the lesson when explaining the parallel circuit material, the teacher displays a learning video through a projector, students listen and then ask questions. This learning video is adopted from other people's work taken from youtube.



Picture 1. Parallel Circuit Learning Videos

b. Power point

The next media that used was power point which contains about effective sentence material in explanatory text. After the teacher explained about parallel circuits using learning videos, then explained the effective sentence material in explanatory texts that are explained through media in the form of power point.

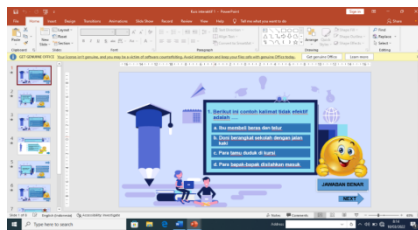


Picture 2. Power point effective sentence material in explanatory text

c. Interactive Power point

The third media used is interactive power point which is used for quizzes as a benchmark for the level of understanding of students. This interactive quiz is designed as attractive as possible so that students are interested and arouse enthusiasm for learning, especially in thematic learning.

This quiz activity begins with the division of groups and each group is asked to form a line. The teacher starts the interactive quiz by reading the first slide and the students answer it enthusiastically, the one who answers first then gets the score. This activity continues until the questions are finished on the next slides.



Picture 3. Interactive Power point

2. Learning Outcomes Using ICT-Based Learning Media in Thematic Learning

The data for the results of the initial ability test in the Thematic Learning Theme 3 Sub-theme 2 the sixth class was taken from the pretest score. This initial value was used to determine the average ability of students, so that the initial abilities of students in thematic learning can be known. Meanwhile, after learning, a posttest was also carried out to determine the results of students' understanding.

a. Pretest Results of Students' Ability in Thematic Learning in Experiment Class and Control Class

Predi-kat	Interval	Nilai Kompetensi		Pemb. Tematik	
		Pengertahuan	Ket	Frek.	%
A	96 –	4,00	Sang		

Table 5. Result of Pretest

Experiment class

Based on the table above, from a total of 34 students, pre-test scores were obtained on thematic learning abilities (Theme 3 Sub-theme 2) in the experimental class there were different qualifications, there were 5 students who got less qualifications, there were 5 students who got sufficient scores. 19 people and 10 students who got good grades. There are no very good qualifications yet.

The pre-test value for the control class can be seen in the table below:

	100		at Bagus		
A-	91 – 95	3,66	Bagus		
B+	86 – 90	3,33			
B	81 – 85	3,00	Bagus		
B-	75 – 80	2,66		10	29%
C+	70 – 74	2,33	Cukup	8	24%
C	65 – 69	2,00		4	11%
C-	60 – 64	1,66		7	21%
D+	55 – 59	1,33	Kurang		
D	< 54	1,00		5	15%
umlah				34	100%

Pre di- kat	Inter val	Nilai Kompetensi		Pemb. Tematik	
		Penge tahuan	Ket	Frek.	%
A	96 – 100	4,00	Sang at Bagus		
A-	91 – 95	3,66	Bagus		
B+	86 – 90	3,33			
B	81 – 85	3,00	Bagus		
B-	75 – 80	2,66		4	11%
C+	70 – 74	2,33	Cukup	8	23%
C	65 – 69	2,00		12	35%
C-	60 – 64	1,66		4	11%
D+	55 – 59	1,33	Kura ng		
D	< 54	1,00		7	20%

jumlah	35	100 %
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Table 6. Result of Pre-test control class

Based on the table above, from a total of 35 students, a pre-test score was obtained on the ability in thematic learning (Theme 3 Sub-theme 2) in the control class there were different qualifications, there were 7 students who got less qualifications, there were 7 students who got enough scores. There were 24 children and students who get good grades are 4 children. There were no very good qualifications yet.

b. Posttest Results of Students' Ability in Thematic Learning in Experiment Class and Control Class

After the learning was carried out, the test was carried out again to see the students' understanding ability in thematic learning, after the treatment was carried out. This post-test value was used to determine the comparison between the value of students before receiving treatment and the value of students after receiving treatment. Students can be declared complete if the value obtained by students was above the KKM, and the KKM in this study was 75. The results of the experimental class post-test can be seen in the table below:

Pre di kat	Inter val	Nilai Kompetensi		Pemb. Tematik	
		Penge tahuan	Ket	Frek.	%
A	96 – 100	4,00	Sang at Bagus		
A-	91 – 95	3,66			
B+	86 – 90	3,33	Bagus	2	5,5%
B	81 – 85	3,00		5	15%
B-	75 – 80	2,66		8	23,5%
C+	70 – 74	2,33	Cukup	8	23,5%
C	65 – 69	2,00		6	17,5%
C-	60 – 64	1,66		4	12%
D+	55 – 59	1,33	Kuran		

D	< 54	1,00	g	1	3%
umlah				34	100%

Table 7. Result of Post-test Experiment class

Based on the table above, from a total of 34 students, the post-test scores for thematic learning abilities in the experimental class had different qualifications, there was 1 student who had less qualifications, 18 students who got enough marks, 18 students who got good marks good there are 15

people. And there were 2 students who got very good qualifications. From the results of this data, it appeared that after receiving treatment there were differences in the results of students' scores.

While the results of the control class posttest could be seen in the table below:

Pre di kat	Inter val	Nilai Kompetensi		Pemb. Tematik	
		Penge tahuan	Ket	Frek.	%
A	96 – 100	4,00	Sang at Bagus		
A-	91 – 95	3,66			
B+	86 – 90	3,33	Bagus		
B	81 – 85	3,00		2	6%
B-	75 – 80	2,66		7	20%
C+	70 – 74	2,33	Cukup	10	28%
C	65 – 69	2,00		9	26%
C-	60 – 64	1,66		6	17%
D+	55 – 59	1,33	Kuran g		
D	< 54	1,00		1	3%
umlah				35	100%

Table 8. Result Post-test Control Class

Based on the table above, from a total of 35 students, the posttest scores for the ability in thematic learning in the control class have different qualifications, students who got less qualifications was 1 person, students who got enough marks were 25 students, students who got enough qualifications are 25 people. good value there were 9 people. And there was no student who had very good qualifications.

3. Analysis of the results of the pretest and posttest data on thematic learning in the experimental class and control class, namely:

a. Average, Standard Deviation, Maximum Value, Minimum Value, and Variance of Students' Scores in Student Pretest Thematic Learning

Average, Standard Deviation, Maximum Value, Minimum Value, and Variance of Students' Scores in Student

Pretest Thematic Learning calculated using SPSS version 22. The description of thematic learning from the students' pretest results can be seen in the following table.

Nilai	Kemampuan Pembelajaran Tematik (<i>Pretest</i>)	
	Kelas Eksperimen	Kelas Kontrol
Rata-rata	65,40	64,40

Standar Deviasi	10,500	13,565
Nilai Maksimal	80	90
Nilai Minimal	40	40
Varians	110,250	184,000

Tabel 9. Deskripsi Hasil *Pretest*

The table above shows that the average value of Thematic learning on the pretest in the experimental class and the control class is only one point apart. The average value obtained for the experimental class is slightly higher, namely 65.40 than the control class, which is 64.40. The maximum value in the experimental class is 80 and in the control class is 90 with a difference of 10. While the minimum value in the experimental class and control class is the same, namely 40.

- b. Average, Standard Deviation, Maximum Value, Minimum Value, and Variance of Students' Scores in Student Posttest Thematic learning.

The description of the results of the posttest Thematic learning for students can be seen in the following table:

Nilai	Kemampuan Pembelajaran Tematik (<i>Posttest</i>)	
	Kelas Eksperimen	Kelas Kontrol
Rata-rata	78,80	68,80
Standar Deviasi	12,523	10,536
Nilai Maksimal	100	80
Nilai Minimal	60	40
Varians	156,833	111,000

Tabel 10. Deskripsi Hasil *Posttest*

The table above shows that the average value of Thematic Learning learning on the *posttest* in the experimental and control classes varies. The average value obtained for the experimental class is 78.80 higher than the control class, which is 68.80 with a difference of 10. The maximum value for the experimental class is 100 and the control class is 80 with a difference of 20. While the minimum value for the experimental class is 80. the experimental class is 60 and the control class is 40 with a difference of 20.

4. Discussion of Research Results

Based on the results of research conducted through observations of teacher and student activities in the thematic learning process using ICT-based media for two meetings, data obtained at the first meeting the success rate of teacher and student activities was very high, namely 98.43% for teacher activities and 96,87% for student activities. At the second meeting the success rate of teacher and student activities was also very high, but at the second meeting there was a decrease in the results of the first meeting, namely 96.87% for teacher activities and 92.18% for student activities.

The success rate of teacher activities at each meeting, namely meetings 1, and 2, reached a very high level, because prior to the implementation of the learning process the researcher had introduced ICT-based media (and explained how it worked. In addition, the teacher was also experienced in teaching thematics in class VI. In accordance with the results of the researcher's interview with the teacher in question. And it is known that the teacher has been a class teacher in the class for almost 10 years. Moreover, the teacher has also recognized how the condition of the class is because the teacher is a class VI A teacher, who was used as an experimental class by the researcher. So , one of the factors in achieving a very high teacher success, is also influenced by the teaching experience possessed by the teacher. So that during the teaching and learning process there are no significant difficulties for the teacher. However, of course there are still some shortcomings in each meeting that make the achievement of activities teacher dala m teaching has not reached 100% results.

At the first meeting all teacher activities were carried out optimally except at the second meeting of all teacher activities carried out there were two activities that were still not optimally carried out by the teacher, namely in providing direction for preparing learning equipment and providing direction during discussions because researchers were not so familiar with Learners. Meanwhile, other activities have been carried out optimally and are included in the very high rating category.

The success rate of student activities from all meetings, from the first meeting to the third meeting, has also reached a very high category. This is

because the totality of teachers when teaching is very good, the percentage gain, at the first and third meetings the teacher gets 96.87% results and students get 96.87% the difference between the acquisition of teacher and student activities is only 1.96%. And seen also at the second meeting the teacher's activities obtained 96.87% results at this meeting the teacher's acquisition slightly decreased from the first meeting and the third meeting. The decrease in the acquisition of teacher activity results at the second meeting resulted in a decrease in the percentage of student activity results on the first and third days, namely 92.18%.

Judging from the previous explanation, it can be said that the more optimal the teacher in carrying out each step of the learning activity, the more maximal the feedback provided by the students during the learning process.

If learning activities take place well without any obstacles, of course it will also affect the success rate of students in achieving learning objectives.

This is evidenced by the analysis of Thematic learning using ICT-based media, in the experimental class using ICT-based media (Information and Communication Technology) the average Thematic Learning ability after receiving treatment increased by 13.4 from the average pretest score of 65, 40 to 78.80 on the posttest average score which is in good/good qualification. And in the control class using word card media, the average Thematic Learning ability after receiving treatment increased by 4.4 from the pretest average value of 64.40 to 68.80 at the posttest average score which was in sufficient qualification. It can be seen that the difference between the results of the achievement in the experimental class and the control class before and after being given treatment is 9 from the results of the difference between the pretest and posttest of the experimental class of 13.4 and the results of the difference between the pretest and posttest of the control class which is only 4.4. These data indicate that there is a significant difference.

CONCLUSION

Based on the research that has been done, the following conclusions can be drawn:

1. Thematic learning process using ICT-based media which was carried out for two meetings, both activities carried out by teachers and students were in the very high category, namely at the first meeting for teacher activities the results obtained 98.43% and for student activities the results obtained the results are 96.87%, at the second meeting for teacher activities the results are 96.87% and for student activities the results are 92.18%. This data was obtained from observation sheets conducted by researchers during the learning process which consisted of 14 points for teacher activities and student activities and in each activity there were scores of 1,2,3, and a maximum of 4 according to the results obtained.
2. Student learning outcomes in Thematic learning Students of class VI MI Al-Abror after being given treatment in the Thematic Learning learning in the experimental class consisting of 34 students using ICT-based media, the average results increased by 13.4 from the average pretest score of 65.40 to 78.80 on the

posttest average value which is in good/good qualification. And in the control class consisting of 35 students using word card media, the average Thematic Learning ability after receiving treatment increased by 4.4 from the pretest average value of 64.40 to 68.80 in the posttest average value. who are in sufficient qualification. It can be seen that the difference between the results of the achievement in the experimental class and the control class before and after being given treatment is 9 from the results of the difference between the pretest and posttest of the experimental class of 13.4 and the results of the difference between the pretest and posttest of the control class which is only 4.4. These data indicate that there is a significant difference.

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