

A STUDY ON ICT-USED BY THE TEACHERS OF MTs DARUL HIKMAH BOARDING SCHOOL PEKANBARU

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Abstract: *This descriptive study aims to discuss to what extent the teachers of MTs Darul Hikmah Boarding School Pekanbaru use ICT in their teaching and learning activities. The researcher used purposive technique sampling to determine the sample. The samples were 50 teachers. The data were gathered by distributing a set of questionnaire which design in the form of five points of the Likert scale. The data were analyzed using Microsoft Excel 2010. After analyzed the data, it can be revealed that the use of ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru in their teaching and learning activities in general was in mediocre level category, with mean of 2.99. Specifically, the use of ICT by the teachers for class preparation was in mediocre level category, with the mean score of 3.14. Furthermore, the use of ICT by the teachers during teaching and learning process was in low level category, with the mean score of 2.60. Then, the use of ICT by the teachers as assessment was in high level category, with the mean score of 3.42.*

Keywords: *A Study, ICT, teaching and learning activities*

STUDI TENTANG PENGGUNAAN TIK OLEH GURU-GURU DI MTs PESANTREN DARUL HIKMAH PEKANBARU

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Abstrak: Penelitian deskriptif ini bertujuan untuk membahas sejauh mana guru-guru di MTs Pesantren Darul Hikmah Pekanbaru menggunakan TIK dalam proses belajar mengajar. Peneliti menggunakan teknik purposive sampling dalam menentukan sampel. Sampel berjumlah 50 orang guru. Data dikumpulkan dengan mendistribusikan satu set angket yang sudah dirancang dalam bentuk lima poin dari skala Likert. Data dianalisis menggunakan Microsoft Excel 2010. Berdasarkan analisis data, dapat ditemukan bahwa secara umum, penggunaan TIK oleh guru-guru di MTs Pesantren Darul Hikmah Pekanbaru dalam proses belajar mengajar berada pada kategori tingkat sedang, dengan rata-rata 2.99. Secara khusus, pemanfaatan TIK sebelum proses belajar berada pada tingkat sedang, dengan rata-rata 3.14. Selanjutnya, penggunaan TIK oleh guru-guru selama proses belajar-mengajar berada pada kategori rendah, dengan rata-rata 2.60. kemudian, penggunaan TIK sebagai penilaian berada pada kategori tinggi, dengan rata-rata 3.42.

Kata Kunci: Studi, TIK, aktivitas belajar-mengajar.

INTRODUCTION

In recent years, Information and Communication Technology (ICT) has become a trending topic of discussion in huge society. It is about the integration of ICT in Education (Okoro & Ekpo, 2016). Many researchers prove that the integration of ICT in education can improve the quality of teaching and learning process. This happens because ICT offers many effective and efficient programs and tools such as the computer, internet, radio, television, tape recorder, YouTube, Email, video and so on (Grabe & Grabe, 2007; Hussain et al., 2011). Therefore, many countries had integrated ICT in the education system such as India, Malaysia, Singapore, Thailand, China and so on (Meenakshi, 2013).

In 2013, Indonesia began to apply ICT-Based Curriculum, with the name of *the 2013 Curriculum*. In this curriculum, the use of ICT is a necessity for every teacher in teaching activities. The policy of using ICT is stated in the Minister of Education and Culture Regulation of the Republic of Indonesia Number 65 of 2013a namely "the use of information and communication technology to improve the efficiency and effectiveness of learning." Moreover, the computer subject is abolished in this curriculum, but the use of ICT is integrated and used as media in all subject lessons.

THE CONCEPT OF USING ICT IN SCHOOL

According to Hasanah (2015), there are three dimensions of using ICT by the teachers. As followings:

1. The Use of ICT for Class Preparing

In this stage, the teachers can use ICT to prepare anything such as formulate the lesson plan, enhance the material, and select appropriate technique of the teaching.

2. The Use of ICT During Teaching and Learning Process

Process is about the real action of approach, techniques, media, and so forth that had stated in the lesson plan. The developments of ICT around the world have been growing rapidly and bring a great influence on the field of education in the learning process. This is because the sophisticated technology that facilitated the teacher in the process of delivering the material with the help of technology as a media of learning. Oliver (2000) state that there are some positives effects of the teachers and students in using ICT as media, as follows:

- a. ICT increase learners' effectiveness and teachers' performance gains. It means that teacher will be able to teach more easily and students will be able to understand the materials in their own way and enable to increase their engagement.
- b. The use of ICT in teaching and learning process gives students the opportunity to enhance language learning by bringing it in the real world.
- c. By using ICT, the students' knowledge can be developed. It can be obtained by search the information that they have not fully understood. In this case, the teacher can also play a role in assisting the development of students' knowledge by showing the materials that students need and displaying them on a projector screen.

- d. Students can work in teams on different projects. In this case, the students will get the materials by learning in outside of classroom. Group learning is one of the most effective forms of learning for students to understand the metrics that teachers present to them. This is because students can share information about the lessons that they understand to other students. In this case, the Internet on the use of ICT can help students in completing tasks and provide information about the material. Students can search for more information and can understand more easily because the internet provides reliable sources that are very useful for students in learning.

In conclusion, the use of ICT as a media in teaching and learning process is very useful for teachers and students. Teacher will be able to teach more easily on present the material and students will be able to understand quickly. The development using the internet is one example of a good method for teachers to teach students. The provision of reliable sources on the internet allows students to get good and true information. Besides that, students are thus able to learn knowledge wider with ICT.

3. The Use of ICT as Assessment

The use of ICT in education can be support assessment practice in various ways. Assessment in this section is the types or domain of assess used by the teachers. The computers can be used for testing, to score students' tests using automatic scoring software and as a tool for doing assessment tasks. This phenomenon is considered as a new way of measuring educational outcomes and is well known as technology-based assessment. The followings are some advantages of using ICT in assessment dimension:

- a. Find effective new and improved assessment methods;
- b. Emphasizing deep learning rather than surface learning;
- c. Interest in using new teaching methods;
- d. Teachers can be alerted sooner to adapt their teaching;
- e. Can spend less time marking;
- f. Increased student confidence; and
- g. Students like instant feedback

RESEARCH METHODOLOGY

This research was descriptive quantitative research that aimed to describe to what extent the teachers of MTs Darul Hikmah Boarding School Pekanbaru use ICT in their teaching and learning activities. This research was conducted on July 2018 at MTs Darul Hikmah Boarding School Pekanbaru. The population was all of the teachers of MTs Darul Hikmah Boarding School Pekanbaru. The purposive technique sampling was used to determine the sample. The samples were 50 teachers of MTs Darul Hikmah Boarding School Pekanbaru. To carry out the research, a set of questionnaire was used to get the data. Before distributed the questionnaire, the try out also was conducted. It was to know the validity and reliability of the instrument. In analyzing the try out, the results revealed that there were 5 items of the questionnaire should be removed. It was because those items were invalid. After the validity and reliability was done, the questionnaire was distributed to the teachers. It has taken for 5 days. After distributed the questionnaire, the data was analyzed by using Microsoft Excel 2010. The results

were divided into 5 categories which those range category was found by using the formula as stated by Gay (2000):

$$\bar{x} = \frac{\sum x}{N}$$

Where:

\bar{x} = Mean score (average score)

$\sum x$ = the sum of respondents' score

N = number of respondents

Based on the formula, the range table for the categories is as follows:

Table 1. The Categories of the Range

Interval	Category
4,21-5,00	Very High
3,41-4,20	High
2,61-3,40	Mediocre
1,81-2,60	Low
1,00-1,80	Very Low

(Brown. 2010)

RESEARCH FINDINGS

A. The Analysis of Data in General

In this type of question, there were 30 items provided with 5 point Likert-scale. The questionnaire was divided into three sections: 1) the use of ICT for class preparation; 2) the use of ICT during teaching and learning process; and 3) the use of ICT as assessment. In each section, the scores of each responses were calculated to find the percentages. The overall result showed in the following table below:

Table 2 the use of ICT in teaching and learning activities

No	Mean	Frequency	Percentage	Description	Mean Score
1	4.20-5.00	0	0%	Very High	
2	3.41-4.20	3	6%	High	
3	2.80-3.40	44	88%	Mediocre	2.99
4	1.81-2.80	3	6%	Low	
5	1.00-1.80	0	0%	Very Low	
Total		N= 50	100%		Mediocre

Table 2 shows that the percentage of using ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru in teaching and learning activities is in different levels. From 50 teachers, no one teacher is in very high and very low category, 3 teachers (6%) are in high and low category, and 44 teachers (88%) are in mediocre category. To find out the mean score of using ICT by the teachers, the researcher calculated by using the formula below:

$$\bar{x} = \frac{\sum x}{N}$$

$$\bar{x} = (\sum x) / N = 149.5 / 50 \\ = 2.99$$

Where, $\sum x$ = the sum of respondents' score
 N = number of respondents

The mean score of the teachers of MTs Darul Hikmah Boarding School Pekanbaru is 2.99. Therefore, the used of ICT by teachers in teaching and learning activities can be categorized in mediocre level category.

B. The Presentation of Data Analysis for Each Section

The results of the questionnaire analysis are described as in the following:

a. The Use of ICT for class preparation

There are 8 items of the questionnaire discussed in this part. The following is the table presenting the percentages result of this section.

Table 3 questionnaire results of using ICT by teachers for class preparation

No	Statements Items	Scales				
		N	S	SS	O	VO
1.	I use computer to prepare the lesson plans.	0%	2 teachers (2%)	1 teacher (2%)	14 teachers (28%)	33 teachers (66%)
2.	I create the teaching aids by using computer.	2 teachers (4%)	23 teachers (46%)	14 teachers (28%)	9 teachers (18%)	2 teachers (4%)
3.	I formulate teaching procedures by using ICT	4 teachers (8%)	24 teachers (48%)	10 teachers (20%)	6 teachers (12%)	6 teachers (12%)
4.	I use Ms. Office (Microsoft word, excel, and power point) to prepare the teaching materials.	0 %	3 teachers (6%)	19 teachers (38%)	22 teachers (44%)	6 teachers (12%)
5.	I use Web to enrich the teaching materials.	1teacher (2%)	3 teachers (6%)	7 teachers (14%)	31 teachers (62%)	8 teachers (16%)
6.	I formulate the assessment technique by using computer.	5 teachers (10%)	18 teachers (36%)	9 teachers (18%)	12 teachers (24%)	6 teachers (12%)
7.	I design the students' competencies by using computer	2 teachers (4%)	18 teachers (36%)	28 teachers (56%)	1 teacher (2%)	1 teachers (2%)
8.	I formulate an outline of coverage teaching material by using ICT	18 teachers (36%)	15teachers (30%)	13 teachers (26%)	3 teachers (6%)	1 teacher (2%)

The summary of using ICT before teaching activities can be seen in the following table:

Table 4 The use of ICT for class preparation

No	Mean	Frequency	Percentage	Description	Mean Score
1	4.20-5.00	5	10%	Very High	
2	3.41-4.20	14	28%	High	
3	2.80-3.40	28	56%	Mediocre	3.14
4	1.81-2.80	3	6%	Low	
5	1.00-1.80	0	0	Very Low	
Total		N=50	100%	Mediocre	Mediocre

Table 4 shows that the percentage of using ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru for class preparation is in different level. From 50 teachers, there are 5 teachers (10%) are in very high category, 14 teachers (28%) are in high category, 28 teachers (56%) are in mediocre category, 3 teachers (6%) are in low category, and no one teacher is in very low category.

To find out the mean score of using ICT by the teachers, the researcher calculated by using the formula below:

$$\bar{x} = \frac{\sum x}{N}$$

$$\bar{x} = (\sum x) / N = 156.8 / 50 \\ = 3.14$$

Where, $\sum x$ = the sum of respondents' score
 N = number of respondents

Based on the results of mean score above, it can be seen that the mean score of using ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru for class preparation is 3.14. It means that their category is in mediocre category.

b. The use of ICT during Teaching and Learning Process

There are 13 items of the questionnaire discussed in this part. The purpose of this part is to find out how often the teachers use ICT during the teaching and learning process.

The following is the table presenting the percentages result of this section.

Table 5 questionnaire results of using ICT by teachers during teaching and learning Process

No	Statements Items	Scales				
		N	S	SS	O	VO
Pre-Teaching Activities						
9	I use my laptop to motivate the students.	18 teachers (36%)	20 teachers (40%)	9 teachers (18%)	2 teachers (4%)	1 teacher (2%)
10	I do the apperception by using the laptop.	5 teachers (10%)	15 teachers (30%)	24 teachers (48%)	5 teachers (10%)	1 teacher (2%)
11	I explore the students' initial knowledge by using PPT on my laptop.	4 teachers (8%)	27 teachers (54%)	16 teachers (32%)	1 teacher (2%)	2 teachers (4%)
Whilst Teaching Activities						
12	I facilitate the students to do the 'observation activity' by using my laptop.	6 teachers (12%)	16 teachers (32%)	15 teachers (30%)	11 teachers (22%)	2 teachers (4%)
13	I facilitate the students to do the 'collecting information activity' by using my laptop.	5 teachers (10%)	20 teachers (40%)	17 teachers (34%)	7 teachers (14%)	1 teacher (2%)
14	I use projector to deliver the lessons.	5 teachers (10%)	16 teachers (32%)	20 teachers (40%)	8 teachers (16%)	1 teacher (2%)
15	I also use You tube as teaching media.	9 teachers (18%)	14 teachers (28%)	12 teachers (24%)	13 teachers (26%)	2 teachers (4%)
16	I give the students opportunities to use computer and internet to find the information about the material being or will be taught.	10 teachers (20%)	12 teachers (24%)	12 teachers (24%)	10 teachers (20%)	6 teacher (12%)
17	I ask the students to find materials for enrichment by using computers and internet.	2 teachers (4%)	13 teachers (26%)	21 teachers (42%)	14 teachers (28%)	0%
18	I use DVD as media in my teaching activities	11 teachers (22%)	7 teachers (14%)	15 teachers (30%)	17 teachers (34%)	0%
19	I also use Laboratory	5 teachers (10%)	10 teachers (20%)	14 teachers (28%)	19 teachers (38%)	2 teachers (4%)

Post Teaching Activities						
20	I use my laptop to facilitate 'summarizing activity'.	12 teachers (24%)	16 teachers (32%)	12 teachers (24%)	10 teachers (20%)	0%
21	I do reflecting activities by using my laptop	10 teachers (20%)	17 teachers (34%)	18 teachers (36%)	5 teachers (10%)	0%

The summary of how often the teachers use ICT during teaching and learning process can be seen in the following table:

Table 6 the use of ICT during teaching and learning Process

No	Mean	Frequency	Percentage	Description	Mean Score
1	4.20-5.00	0	0%	Very High	
2	3.41-4.20	2	4%	High	
3	2.80-3.40	22	44%	Mediocre	2.60
4	1.81-2.80	26	52%	Low	
5	1.00-1.80	0	0%	Very Low	
Total		N=50	100%		Low

Table 6 shows that the percentage of using ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru during teaching and learning process is in different levels. From 50 teachers, there is no one teachers is in very high and very low category, meanwhile, 2 teachers (4%) are in high category, 22 teachers (44%) are in mediocre category, and 26 teachers (52%) are in low category.

To find out the mean score of using ICT by the teachers, the researcher calculated by using the formula below:

$$\bar{x} = \frac{\sum x}{N}$$

$$\bar{x} = (\sum x) / N = 130.2 / 50 = 2.60$$

Where, $\sum x$ = the sum of respondents' score
 N = number of respondents

Based on the results of mean score above, it can be seen that the mean score of using ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru during teaching and learning process is 2.60. It means that their category is in low category.

c. The Use of ICT as Assessment

There are 9 items of the questionnaire discussed in this part. The purpose of this part is to find out how often the teachers use ICT as assessment. The following is the table presenting the percentages result of this section.

Table 7 Questionnaire results of using ICT as assessment by teachers

No	Statements Items	Scales				
		N	S	SS	O	VO
22	I do an attitude assessment by using computer.	4 teachers (8%)	12 teachers (24%)	16 teachers (32%)	13 teachers (26%)	5 teachers (10%)
23	I do a knowledge assessment by using computer.	3 teachers (6%)	9 teachers (18%)	20 teachers (40%)	16 teachers (32%)	2 teachers (4%)
24	I do a skill assessment by using computer.	0%	22 teachers (44%)	17 teachers (34%)	10 teachers (20%)	1 teacher (2%)
25	I do a discovery assessment by using my laptop	4 teachers (8%)	8 teachers (16%)	19 teachers (38)	11 teachers (22%)	8 teachers (16%)
26	I use Blog and Web to upload students' ability.	7 teachers (14%)	1 teachers (2%)	12 teachers (24%)	18 teachers (36%)	12 teachers (24%)
27	I save the students' ability data by using computer	3 teachers (6%)	5 teachers (10%)	4 teachers (8%)	8 teachers (16%)	30 teachers (60%)
28	I assess the pre-test of students by using my laptop	0%	3 teachers (6%)	6 teachers (12%)	10 teachers (20%)	31 teachers (62%)
29	I assess the post-test of students by using my laptop	0%	3 teachers (6%)	8 teachers (16%)	35 teachers (70%)	4 teachers (8%)
30	I process the data related to students' ability by using Microsoft Excel.	4 teachers (8%)	20 teachers (40%)	15 teachers (30%)	7 teachers (14%)	4 teachers (8%)

The summary of using ICT as assessment can be seen in the following table

Table 8 the use of ICT as assessment

No	Mean	Frequency	Percentage	Description	Mean Score
1	4.20-5.00	2	4%	Very High	
2	3.41-4.20	31	62%	High	
3	2.80-3.40	15	30%	Mediocre	3.42
4	1.81-2.80	2	4%	Low	
5	1.00-1.80	0	0%	Very Low	
Total		N=50	100%		High

Table 8 shows that the percentage of using ICT as assessment by the teachers of MTs Darul Hikmah Boarding School Pekanbaru is in different levels. From 50 teachers, there are 2 teachers (4%) are in very high category, 31 teachers (62%) are in high category, 15 teachers (30%) are in mediocre category, 2 teachers (4%) are in low category, and no one teachers is in very low category.

To find out the mean score of using ICT by the teachers, the researcher calculated by using the formula below:

$$\bar{x} = \frac{\sum x}{N}$$

$$\begin{aligned}\bar{x} &= (\sum x)/N = 171/50 \\ &= 3.42\end{aligned}$$

Where, $\sum x$ = the sum of respondents' score
 N = number of respondents

Based on the results of mean score above, it can be seen that the mean score of using ICT as assessment by the teachers of MTs Darul Hikmah Boarding School Pekanbaru is 3.42. It means that their category is in high category.

Discussion

This research provides important information regarding issues related to what extent the teachers of MTs Darul Hikmah Boarding School Pekanbaru use ICT in teaching activities. From the findings, the use of ICT by the teachers is divided into three sections; the use of ICT for class preparation, during teaching and learning process, and as assessment.

The first part of the research is to describe to what extent the teachers use ICT for class preparation. The results revealed that the level of using ICT by the teachers in this section is at mediocre level since they only use certain items. For instance, the use of computer to prepare the lesson plan, the use of Web to enrich the teaching materials and the use of Ms. Office to prepare the teaching materials as these are the main items which is frequently and commonly been used by the teachers. In this regard, this findings also reflects that most teachers are just normal users because these items are often been used for personal purpose. The findings of this research seem to be similar to the results of the research done by Umar and Hassan (2015) revealed that teachers' minority groups of teachers are knowledgeable on certain applications such as word processing and internet browsing. This research provides information on what type of tools and materials that the teachers need to master in order to increase the level of knowledge and skills related to use ICT.

The second findings revealed that the use of ICT by the teachers during teaching and learning process. It can be seen from the finding only a small proportion of the teachers (i) use laptop to do the 'observation activity' (ii) use laptop to do 'collecting activity', and (iii) use projector to deliver the lessons. Accordingly, the use of YouTube as teaching media is also not satisfactory. The findings also show that the majority of the teachers never use laptop to motivate the students in pre-teaching activities. Thus, this is the indicators that describe the level of using ICT by the teachers of MTs Darul

Hikmah Boarding School Pekanbaru during teaching and learning process is considered low. These findings support another finding by Almas and Krumsvik (2008) state that majority of the teachers are still yet to exploit the creative potential of using ICT while teaching and learning activities.

The last part of the research revealed that the use of ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru as assessment. The result shows that the use of ICT by the teachers as assessment is high category level. This result support the research obtained by Ghavifekr *et al.*, (2014) state that the majority of the teachers is in high category towards the use of ICT as assessment.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The findings of this research revealed that the use of ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru in three sections are in different level categories. It can be seen that the use of ICT for class preparation was in mediocre category with mean score of 3.14. Meanwhile, the use of ICT during teaching and learning process was in low category with mean score of 2.60. Then, the use of ICT as assessment was in high category with mean score of 3.42. Besides, the use of ICT by the teachers of MTs Darul Hikmah Boarding School Pekanbaru in general is in mediocre category with mean score of 2.99.

Recommendations

After looking at the result, the researcher would like to offer some suggestions, they are; (1) it will be better if the teachers would like to use ICT in their teaching and learning activities. Especially the use of ICT during teaching and learning process, (2) it is expected that the quality of teaching and learning process can be improve, (3) it is expected that the school provided the teaching and learning facilities such as computers, internet, projectors, electricity, and so on. It aims to make the class run effectively, (4) the teachers also expected that they should have a desire to improve their understanding and knowing in how to use ICT. It is because the teachers have an important role in students' motivation and curiosity, (5) the teachers also can be given sufficient training on how to use ICT in teaching and learning processes to acquire the requisite knowledge and skills in integrating the technology in classrooms.

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