

**THE UTILIZATION OF ICT IN TEACHING AND LEARNING
ACTIVITIES BY TEACHERS OF SMK DAR EL HIKMAH
BOARDING SCHOOL PEKANBARU**

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***Abstract :** This descriptive study aims to discuss to what extent the teachers utilize ICT in teaching and learning activities, as teaching media and learning resources as well as the obstacles faced by teachers while utilizing ICT. The population of this study was the teachers of SMK Dar El Hikmah Boarding School selected by using total sampling technique (n: 20). Data were gathered by distributing a set of questionnaire designed in the form of five points of the Likert scale. The data were analysed using Microsoft Excel 2010. Based on the data analysis, it can be concluded the utilization of ICT in teaching and learning activities in general was in high level category, with the mean of 3.6. Specifically, the utilization of ICT in teaching and learning process was in high category level, and the utilization of ICT as teaching media and learning resources was in mediocre category level, with the mean score of 3.18. Obstacles related to availability of facilities and infrastructures were faced by the teachers and some suggestions to overcome the problems are given in this research.*

Keywords: Utilization, ICT, teaching media, learning resources.

PEMANFAATAN TIK DALAM KEGIATAN BELAJAR MENGAJAR OLEH GURU SMK DAR EL HIKMAH BOARDING SCHOOL PEKANBARU

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Abstrak: Penelitian deskriptif ini bertujuan untuk membahas sejauh mana guru menggunakan TIK dalam kegiatan belajar mengajar, seperti media pengajaran dan sumber belajar serta hambatan yang dihadapi oleh guru saat menggunakan TIK. Populasi dalam penelitian ini adalah guru SMK Dar El Hikmah yang dipilih dengan menggunakan teknik total sampling (n: 20). Data dikumpulkan dengan mendistribusikan satu set kuesioner yang dirancang dalam bentuk lima poin dari skala Likert. Data dianalisis menggunakan Microsoft Excel 2010. Berdasarkan analisis data, dapat disimpulkan pemanfaatan ICT dalam kegiatan belajar mengajar, secara umum, berada dalam kategori tingkat tinggi, dengan rata-rata 3,6. Secara khusus, pemanfaatan TIK dalam proses belajar mengajar berada di tingkat kategori tinggi, dan pemanfaatan TIK sebagai media pengajaran dan sumber belajar berada di level kategori biasa-biasa saja, dengan skor rata-rata 3,18. Kendala terkait dengan ketersediaan sarana dan prasarana dihadapi oleh guru dan beberapa saran untuk mengatasi masalah yang diberikan dalam penelitian ini.

Kata kunci: Pemanfaatan, TIK, media pengajaran, sumber belajar.

INTRODUCTION

Information and Communication Technologies (ICT) have been developed rapidly in recent years. Salehi and salehi (2012) point out that since the 1960s such technologies as televisions, tape recorders and video have been used as teaching tools. Today, ICT can be hardware such as computers, projectors, digital cameras, etc., and can also be software such as Microsoft Word, PowerPoint, etc. (Wang and Woo, 2007). Furthermore, in education, ICT is accepted as a meaningful medium to be used in the classroom to motivate students in learning (Wekke and Hamid, 2013).

In the 2013 curriculum, there is a no longer ICT subject offered to the students, whether in elementary, secondary or high school level. However, ICT must be used as media of learning for all subjects. The policy of the utilization of ICT can also be seen in Permendikbud RI No. 65 of 2013a, it deals with the utilization of ICT to improve the efficiency and effectiveness of learning.

THE IMPORTANCE OF ICT

At the present time, ICT is not a new thing. People have dealt with technology for decades. The importance of ICT should not be questioned. It has many benefits. Alfrida Amell (2012), states that there are several benefits of using ICT in the classroom. First of all, ICT helps to create more variation in the classroom, which might lead to increased motivation in the students and thus better conditions to learn the target skills. What is more, the Internet is full of free of charge authentic and up-to-date material that teachers can use in their teaching. Also, the Internet provides the opportunity for students from all over the world to interact with each other; this could be done through emails, online calls or in a chat room. Regardless of what the means of communication chosen, ICT is likely to help develop the understanding of other cultures in the students that participate. The use of ICT also gives the students an opportunity to write for others rather than only for their teacher or peers. If their production is posted on a blog, it has the potential to be read, and this could help assure that the students put more effort into their work.

What's more, ICT can help adapt the teaching to the individual level of the students. The students who achieve well can receive more advanced tasks while students who underachieve can benefit from work more suitable to their level. Also, for those students with learning disabilities can greatly benefit from the use of ICT. There are a great number of computer resources produced especially with such pupils in mind, for instance, texts with an easier language or more images and colours

Muehleisen in Masnur (2015), also said that the Internet has a potential to provide a new learning environment that has rich digital textual, graphic, audio, video and other interactive features for the language learning approach as well as for culture. These are the reasons for using the Internet in the classroom are as follow of learning to use computers provides a strong intrinsic motivation for learning English, the Internet places English in an international context, Internet projects are interactive, and facilities for using the Internet are often readily available.

Then, Muehleisen as cited in Masnur (2015), added that English teacher need ICT to innovate and earn the new hot ideas for teaching English. The utilization of ICT

and the device actually have been utilizing after the 18th century. It is really potential to build the good atmosphere of teaching and learning English. There are several reasons why ICT must be utilized in the English class; firstly, it gives the spirit for students. Secondly, ICT is the global place to learn English. Thirdly IWBs is really interactive media. Lastly, the device of ICT is suitable to be utilized in the communication's age and it is really easy to be utilized.

RESEARCH METHODOLOGY

This study was a descriptive quantitative research that aimed to discuss to what extent the teachers of SMK Dar-El Hikmah Boarding School Pekanbaru utilize ICT in teaching and learning activities, ICT as a teaching media and learning sources, and to know the obstacles faced by teachers of SMK Dar-El Hikmah Boarding School Pekanbaru in utilizing ICT in teaching activities, utilizing ICT as a teaching media, and learning resources. This research was conducted on February to June 2018 at SMK Dar El Hikmah Boarding School Pekanbaru. The population of this research was the teachers of SMK Dar El Hikmah Boarding School. Since the number of teachers in this school is relatively small, the researcher decided to take all as the sample by using total sampling technique. To conduct this research, a set of questionnaire was used. Before distributed the questionnaire to the sample, it was tried out to the sample of the study. After analysing the results of the try out, there were 6 items that had to be removed because the statements were invalid. After deleting the 6 items, the questionnaire was distributed to the sample in order to answer the research questions. After collecting the data, the researcher then analyzed the questionnaire by using Microsoft Excel 2010 for frequency and percentages of each item. The results were divided into 5 categories. Then, the range of each category was found by using the formula as stated by Gay (2000):

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

Where:

- \bar{x} = Mean score (average grade)
 $\sum x$ = the sum of respondents' grade
 N = number of respondents

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

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

RESEARCH FINDINGS

A. Analysis of Data in General

In this type of question, there were 24 items provided with 5 point Likert-scale. The questionnaire was divided into four sections: 1) utilization of ICT in learning preparation activities; 2)utilization of ICT while teaching and learning activities; 3) utilization of ICT in learning assessment activities; 4)utilization of ICT as teaching media and learning resources. In each section, the score of each response was calculated to find the percentages. A higher percentage indicated the quality of ICT utilization obtained by the teachers. The overall result is shown in the following table.

Table 1 The Summary of the Questionnaire

Total Participants	Average Score	Average	SD	Max	Min
20	86.5	3.6	12.0	98 (4.08)	76 (3.16)

In terms of the calculation of the teachers' responses, the average of the teachers' total scores is 86.5 and the standard deviation is 12.0. The average scores of the participants were also calculated, resulting in a mean of 3.6. The maximum score obtained is 98 (Mean = 4.08) and the minimum score is 76 (Mean = 3.16). The classification of how often the teachers utilize ICT in their teaching and learning activities can be seen in the following table:

Table 2. ICT utilization in teaching and learning activities

No	Mean	Frequency	Percentage	Description
1	4.20-5.00	0	0	Very High
2	3.41-4.20	13	65%	High
3	2.80-3.40	7	35%	Mediocre
4	1.81-2.80	0	0	Low
5	1.00-1.80	0	0	Very Low
Total means: 3.6		N=20	100%	High

The table of percentage of ICT utilization in teaching and learning activities indicates that teachers ICT utilization is in different levels. The highest number that teachers can utilize ICT in their teaching and learning activities is in the level of high category that is 65% of the teachers (13 teachers). Meanwhile, the other is in mediocre level category that is 35% of the teachers (7 teachers). Therefore, it can be stated that ICT utilization by teachers in teaching and learning activities in general is in high level category.

B. The Presentation of Data Analysis for each sections.

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

1. Utilization of ICT in Teaching and Learning Process

In this section, there are three sub-sections discussed; 1) ICT utilization in learning preparation activities, 2) ICT utilization while teaching and learning activities and, 3) ICT utilization in learning assessment activities. The data analyses are described as in the following:

1.1 ICT utilization in learning preparation activities

There were 6 items of the questionnaire discussed in this part. The purpose of this part was to find out how often the teachers utilize ICT in learning preparation activities. The following table is the summary of ICT utilization in learning preparation activities.

Table 3. ICT utilization in learning preparation activities.

Total Participants	Average Score	Average	SD	Max	Min
20	24.75	4.125	6.36	30 (5)	18 (3)

In terms of the calculation of the teachers' responses of ICT utilization in learning preparation activities, the average of the teachers' total score is 24.75 and the standard deviation is 6.36. The average score of the participants were also calculated, resulting in a mean of 4.125. The maximum score obtained is 30 (Mean = 5) and the minimum score is 18 (Mean = 3). The classification of how often the teachers utilize ICT in learning preparation activities can be shown in the following table:

Table 4 ICT utilization in learning preparation activities

No	Mean	Frequency	Percentage	Description
1	4.20-5.00	7	35%	Very High
2	3.41-4.20	10	50%	High
3	2.80-3.40	3	15%	Mediocre
4	1.81-2.80	0	0	Low
5	1.00-1.80	0	0	Very Low
Total means: 4.125		N=20	100%	High

Table of percentage of ICT utilization in learning preparation activities indicates that teachers ICT utilization is in different level. The highest number that teachers can utilize ICT in learning preparation activities is in the level of high category that is 50% of the teachers (10 teachers). Only 7 teachers (35%) can utilize ICT in the level of very high category. Meanwhile, the other is in mediocre level category that is

15% of the teachers (3 teachers). Therefore, ICT utilization done by teachers in learning preparation activities can be categorized in high level category.

1.2 ICT utilization while teaching and learning activities

There were 9 items of the questionnaire discussed in this part. The purpose of this part was to find out how often the teachers utilized ICT while the teaching and learning activities. The following is the summary of ICT while teaching and learning activities

Table 5. ICT utilization while teaching and learning activities

Total Participants	Average Score	Average	ΣSD	Max	Min
20	29.35	3.26	0.53	36(4)	24 (2,67)

In terms of the calculation of the teachers' responses of ICT utilization while teaching and learning activities, the average of the teachers' total score is 29.35 and the standard deviation is 0.53. The average score of the participants were also calculated, with the mean of 3.26. The maximum score obtained is 36 (Mean = 4) and the minimum score is 24 (Mean = 2.67). The classification of how often the teachers utilize ICT while teaching and learning activities can be seen in the following table:

Table 6 ICT utilization while teaching and learning activities

No	Mean	Frequency	Percentage	Description
1	4.20-5.00	0	0	Very High
2	3.41-4.20	10	50%	High
3	2.80-3.40	9	45%	Mediocre
4	1.81-2.80	1	5%	Low
5	1.00-1.80	0	0	Very Low
Total means: 3.29		N=20	100%	High

The table of percentage of ICT utilization while teaching and learning activities indicates that teachers ICT utilization is in different levels. The highest number that teachers can utilize ICT while teaching and learning activities is in the level of high category that is 50% of the teachers (10 teachers). Only 1 teacher (5%) can utilize ICT in the level of low category. Meanwhile, the other is in mediocre level category that is 45% of the teachers (9 teachers). Therefore, ICT utilization by teachers while teaching and learning activities can be categorized in high level category.

1.3 ICT utilization in learning assessment activities

There were 3 items of the questionnaire discussed in this part. The purpose of this part was to find out how often the teachers utilized ICT in learning assessment activities. The following table is the summary of ICT in learning assessment activities

Table 7. ICT utilization in learning assessment activities

Total Participants	Average Score	Average	ΣSD	Max	Min
20	13.3	4.43	0.21	15(5)	12 (4)

In terms of the calculation of the teachers' responses of ICT utilization in learning assessment activities, the average of the teachers' total score is 13.3 and the standard deviation is 0.21. The average score of the participants were also calculated, with the mean of 4.43. The maximum score obtained is 15(Mean = 5) and the minimum score is 12 (Mean = 4). The classification of how often the teachers utilize ICT in learning assessment activities can be seen in the following table:

Table 8. ICT in learning assessment activities

No	Mean	Frequency	Percentage	Description
1	4.20-5.00	13	65%	Very High
2	3.41-4.20	7	35%	High
3	2.80-3.40	0	0	Mediocre
4	1.81-2.80	0	0	Low
5	1.00-1.80	0	0	Very Low
Total means: 4.43		N=20	100%	Very High

The table of percentage of ICT utilization in learning preparation activities indicates that teachers ICT utilization is in different levels. The highest number that teachers can utilize ICT in learning assessment activities is in the level of very high category that is 65% of the teachers (13 teachers). Meanwhile, the other is in high level category that is 35% of the teachers (7 teachers). Therefore, ICT utilization by teachers in learning preparation activities can be categorized in very high level category.

2. Utilization Of ICT as Teaching Media and Learning Resources

There were 6 items of the questionnaire presented in this section. The purpose was to find out about the utilization of ICT by teachers as teaching media and learning resources. The following is the table presenting summary of ICT as teaching media and learning resources.

Table 9. ICT as teaching media and learning resources

Total Participants	Average Score	Average	ΣSD	Max	Min
20	19.1	3.18	0.95	24(4)	15 (2.5)

In terms of the calculation of the teachers' responses of ICT utilization as teaching media and learning resources, the average of the teachers' total score is 19.1 and the standard deviation is 0.95. The average score of the participants were also calculated, with the mean of 3.18. The maximum score obtained is 24(Mean = 4) and

the minimum score is 15 (Mean = 2.5). The classification of how often the teachers utilize ICT as teaching media and learning resources can be seen in the following table:

Table 10. ICT as teaching media and learning resources

No	Mean	Frequency	Percentage	Description
1	4.20-5.00	0	0	Very High
2	3.41-4.20	6	30%	High
3	2.80-3.40	14	70%	Mediocre
4	1.81-2.80	0	0	Low
5	1.00-1.80	0	0	Very Low
Total means: 3.18		N=20	100%	Mediocre

The table of percentage of ICT utilization as teaching media and learning resources indicates that teachers ICT utilization is in different levels. The highest number that teachers can utilize ICT as teaching media and learning resources is in the level of mediocre category that is 70% of the teachers (14 teachers). Meanwhile, the other is in high level category that is 30% of the teachers (6 teachers). Therefore, ICT utilization by teachers in learning preparation activities can be categorized in mediocre level category.

3. Obstacles encountered by teachers of SMK Dar-El Hikmah Boarding School Pekanbaru in utilizing ICT.

In the field of education, ICT has the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help connect school experience with work practices, and strengthen the teaching system (Davis and Tearle, 1999; Lemke and Coughlin, 1998; as cited in Yusuf, 2005). Nonetheless, applying ICT in the teaching and learning activities is not as easy as it seems. It is due to some obstacles they often faced. According to the result findings, it was found that the obstacles often faced by teachers of SMK Dar El Hikmah Pekanbaru are still in the form of classical problems namely; the obstacles related to the availability of facilities and infrastructure as well as limited time to design creative teaching media and learning processes. The following are the problems encountered by the teachers on ICT utilization while the teaching and learning activities: (R refers to Respondent)

(R1) Kendala yang sering kami hadapi ketika proses pembelajaran adalah listrik yang tidak stabil. Hal ini karena banyaknya pemakaian yg di gunakan, sementara daya listrik yang tersedia kurang memadai. (Obstacles that we often face while the teaching and learning process is unstable electricity. This is because the number of usage is too many while the available electricity is inadequate).

As R1 stated above, it is clear enough that the most common problems teachers often faced in this school is the availability of electricity. Most of the teachers agreed with that. R2 further clarifies that the electricity is not only used for school but also for other building which is available around the school.

(R2) *pemakaian listrik tidak hanya untuk sekolah, tapi juga di salurkan kerumah-rumah di lingkungan pondok, jadi yaaa kita kudu sabar ketika listriknya mati. (electricity usage is not only for schools, but also for houses around the school, so yaaa we have to be patient when the electricity is off).*

Thus, the teachers SMK Dar El Hikmah Boarding School still faced this kinds of infrastructure problem. Of course, this could hamper the effectiveness of teaching activities. Futhremore, the researchers found another problem; the availaibility of projectors. Many teachers stated that projectors are the problem often faced while utilizing ICT in their classroom activities. The following are the problems encountered by the teachers on ICT utilization while the teaching and learning activities: (R refers to Respondent)

(R3) *Dalam pemanfaatan TIK, mungkin kami banyak mengalami masalah di bagian media pembelajaran. Kami ini masih kekurangan proyektor. (In the utilization of ICT, we may face many problems in the learning media. We are still short of projectors).*

As we know that it is important for school to provide a projector for every class. If the projector is only available to one or two class, then, utilizing it effectively in teaching would be a problem. R2 further explains that the internet connection also a problem often encounter by them.

(R4) *kami terkadang kesulitan untuk menggunakan youtube sebagai sumber belajar. Disini penggunanyakan banyak, sementara wifinya cuman satu. Itu pun untuk pemakaiannya terbatas. (We sometimes find it difficult to use YouTube as a learning resource. We have a lot of users here, but the Wi-Fi is only one available and that is for limited use).*

According to this, it could be stated that the teachers have three major challenges in utilizing ICT. Limited ICT tools and the electricity at schools are the dominant challenges. The teachers have to share the tools with other teachers and this wastes time to wait for their turn to use ICT.

DISCUSSION

This study answered the research questions related to the utilization of ICT in teaching activities and learning activities, as a media and learning resources and the obstacles faced by the teachers of SMK Dar El Hikmah Boarding school Pekanbaru. After analyzing the data, the reseacher found that the teachers' demographic data does not have significant impact on ICT utilization. However, it may have indirect effects regarding to the teaching experience and the level of computer mastery. Besides, young

teachers may have less teaching experience than senior teachers as well as the level of computer mastery. This is in line as what Mahdi& Al-Dera (2013) state that teaching experience may have effect to ICT utilization.

From the results of data analysis regarding what extent the teachers utilize ICT in their teaching and learning activities, the average score of the data in general was 3.6 which indicated the ICT utilization was in high level category. Specifically, the teachers' average score in terms of ICT utilization in teaching preparation activity such as preparing teaching materials, formulating teaching procedure, formulating coverage and assessment technique, and the teachers' average score in terms of ICT utilization while teaching and learning process such as facilitating questioning activity, collecting information activity, associating activity, and communicating activity by utilizing laptop is in high level category. It shows that the teachers have done to utilize ICT, but still encounter obstacles while utilizing it or still need to improve the teachers' ability. Then, the teachers' average score in terms of ICT utilization in learning assessment activities is 4.43. It indicates that the teachers have already understood and knew how to utilize ICT assessing the students' work properly. These findings support another finding by Laily Amin Fajariyah (2013) states that the teachers from some areas in Indonesia who are enrolling their master degree in UNY already utilize ICT well for planning their teaching such as designing the lesson plan, materials and media, for presenting the materials or giving students assignment and so on.

Among the three sections of the questionnaire of this part, ICT utilization in learning assessment got the highest mean (4.43) and ICT utilization while teaching and learning activities got the lowest mean among the three (3.26). It indicated the teachers have already understood and knew how to utilize ICT assessing the students' work properly. The discussion above has already answered the first research question "to what extent do the teachers of SMK Dar-El Hikmah Boarding School Pekanbaru utilize ICT in teaching activities?"

The following discussion is the answer of the second question "to what extent does the teachers of SMK Dar-El Hikmah Boarding School Pekanbaru utilize ICT as a teaching media and learning resources?". The answer is based on the result discussed in previous part. It found that the teachers' average score in terms of ICT utilization as a teaching media and learning resources is 3.18 which categorized in mediocre level. It indicates that some of the teachers still encounter obstacles while utilizing it. For instance, the utilization of social media (Facebook, Twitter, Whatsapps) by teachers to give information is not possible to be conducted due to the regulation of the school itself which forbid the students to bring any electronic devices such as smarphone and others. This is because the background of the school which is islamic boarding school.

Regarding to the obstacles faced by the teachers while utilizing ICT in teaching and learning activities, as teaching media and learning resources, the result revealed that there were three most common problems faced by teachers; 1) the availability of tools, 2) the electricity, and 3) the internet connection. These findings support another finding of Asnawi Moslem (2017) that poor internet connection and limited tools were the obstacles for the teachers using ICT. Besides, Masnur (2015) also stated that the electricity was the obstacles as well. Overall, the obstacles that the reseracher found was still in the form of classical obstacles.

CONCLUSIONS AND RECOMMENDATIONS

The finding showed that the Utilization of ICT in teaching and learning activities by teachers of SMK Dar El Hikmah Boarding School Pekanbaru in general was in high category level, with the mean of 3.6. Meanwhile, the utilization of ICT in teaching and learning process was in high category level and the utilization of ICT as teaching media and learning resources is in mediocre category level, with the mean score of 3.18.

The obstacles faced by teachers of SMK Dar El Hikmah Pekanbaru were still in the form of classical problems, namely; the obstacles related to the availability of facilities and infrastructure as well as limited time and tools to design creative teaching media and learning processes. The efforts to overcome the obstacles had been made by teachers of SMK Dar El Hikmah Boarding School Pekanbaru. However, the results were not maximum yet. The recommendations that can be given are: (1) the school should provide projector for every class. It aims to make the class run effectively. But before that, it is very important for school to add more power for electricity (2) the school principal should make training programs to increase teachers' ability related to utilization of ICT so that the learning objectives as expected by the *2013 Curriculum* can be achieved and teachers must try to improve their knowledge about ICT utilization, either through training or self-study; (3) If they have sufficient ability, teachers can direct students to be able to utilize ICT in achieving learning objectives. The governments, as well, has to provide schools with the ICT devices.

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