

## TEACHER READINESS AND BARRIERS IN USING THE VIRTUAL LEARNING ENVIRONMENT FOR TEACHING AND LEARNING IN MALAYSIAN SECONDARY SCHOOLS

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### ABSTRACT

This study was designed to examine the readiness of teachers in using the virtual learning environment (Frog VLE) for teaching and learning. This study also examines the obstacles faced by the teachers in the use of Frog VLE in school. The sample consisted of 60 teachers in two schools in one of the districts in Malaysia and they were randomly selected. Questionnaire was used as an instrument. The results show that the Cronbach Alpha for readiness of teacher items is 0.822 and barriers preventing teachers an item is 0.911. Readiness and barriers faced by the teachers in the use of Frog VLE were measured using descriptive statistical analysis (frequency, percentage, mean and standard deviation). For the relationship between teacher immediacy obstacles in the use of Frog VLE, the Pearson correlation test was used. The results have shown that the level of preparedness of teachers in terms of the appropriateness, effectiveness, and comfort was at a moderate level with mean = 3.40. In addition, the findings of the obstacles faced by teachers ranging from 5 hurdle a barrier lack of confidence, lack of efficiency barriers, barriers of lack of time, lack of access barriers and obstacles less effective training shows that barriers of lack of time is the highest barrier ( mean = 3.62) when compared with other obstacles. The study also showed a modest but strong values ( $r = -0.503$ ,  $p = 0.000 < 0.01$ ) between teacher immediacy obstacles in the use of Frog VLE. There are several suggestions for further research mentioned for the effective use of Frog VLE.

**KEYWORDS:** Virtual Learning Environment (Frog VLE), Teacher Readiness and Barriers

### INTRODUCTION

In 2013, in order to strengthen the teaching and learning process, the Ministry of Education (MOE) has increased the internet access and a virtual learning environment through 1BestariNet involving 10,000 schools. ICT is always a part of everyday life at school, without the gap between the rural and urban areas. Therefore, all teachers and students will be equipped with the necessary skills to use technology effectively and meaningfully. The Ministry has also added an online content to share what is the best practice of teaching and learning. Then, MOE introduces the best teacher's video library as a platform to help teachers deliver their lesson for critical subject. Therefore, the benefit of ICT application for teaching and learning through the open and self-access learning is to improve the capacity of more specialized.

To disclose the successful transformation in education, the most important factor is the performance of teachers following the new education plan. The Successful Education Development Plan 2013-2025 highly depends on the quality of teaching and learning. A great positive attitude and commitment of all teachers are the most important factor for the

successful of the transformation in education which is holistic and multi-dimensional.

The success of the new education plan implementation is highly dependent on the ability of teachers to realize the goals and aspirations of education as prescribed. In addition, the provision of adequate infrastructure and the effectiveness of the education quality through the learning process (training) should also be considered. In addition, producing a high quality and excellent teachers also play a role.

Furthermore, teachers must embrace the spirit and philosophy of the teacher education. Appreciating the philosophy of teacher education will encourage teachers to improve the Education Development Plan 2013-2025.

## PROBLEM STATEMENT

Frog VLE system is one of the virtual channels that have been prepared by the Ministry of Education in collaboration with YTL Communications. This approach needs to be implemented by teachers but are the teachers prepared to implement this approach in improving the quality of teaching and learning? Are the skills of teachers adequate to use virtual learning known as the Frog VLE?

In the article Aleza Nadia Othman (2013), according to Suan Yeo, Chief Communities (APAC), he states that "In the modern era, the process of learning takes place outside the classroom. The teachers and administrators should be aware of these reforms. "

The teacher is the key asset to apply technology in teaching and learning as an example of virtual learning (Frog VLE). Teachers are the core personnel to ensure that they implement it effectively in schools. Teachers need to have a quality which is contemporary and relevant to the era. According to Robiah (1994) derived from Habib and Megat Ahmad Kamaluddin (2008), she proposed a number of criteria that the teacher should have to be able to deal with the changing times. Those criteria are:

- Able to lead change in schools where teachers work
- Place a high yield in the field of career
- Always follow the passage of time
- Understanding the development of technology
- Have the courage, like to try new and innovative ideas

According to Gan (2000), the lack of training is a prohibitive factor in the use of computers in all subjects. Teachers are still not integrating information and communication technology (ICT) teaching and learning in the classroom, whereby the majority of teachers still use traditional teaching methods and not using ICT.

In addition, there are several possibilities that many educators who use the Internet as an alternative that provides access to information that can help enhance teaching and learning materials.

Teacher readiness is an important factor in computer application on their daily teaching tasks (Lay and Khoo, 2000). Therefore, when computers are introduced, teachers feel uncomfortable, but still try to use them in their teaching and learning.

This study should be conducted to determine how and to what extent do the teachers use virtual learning environment (VLE Frog) in school.

## OBJECTIVES

The purpose of this study is to:

- Identify the willingness of teachers to use a virtual learning environment (VLE Frog) in teaching and learning.
- Identify the obstacles faced by teachers in the use of virtual learning environment (VLE Frog) in teaching and learning.
- Identify the relationship between the level of preparedness of teachers with obstacles encountered in using a virtual learning environment (VLE Frog) in teaching and learning.

## RESEARCH QUESTIONS

There are three questions that need to be answered in this study.

- What is the extent of the willingness of teachers to teaching and learning using a virtual learning environment (VLE Frog)?
- What obstacles faced by teachers in the use of a virtual learning environment (VLE Frog)?
- Is there a significant relationship between the level of preparedness of teachers with the obstacles encountered in using a virtual learning environment (VLE Frog) in teaching and learning?

## LITERATURE REVIEW

### Teacher Readiness Using Virtual Learning Environment for Teaching and Learning in Schools

The study shows that the acceptance of e-learning among teachers and students are great, but they still require technical training to improve the effectiveness of its use (Gordon O. Ouma, Fredrick M. Awour and Benjamin Kyambo, 2013). In another study by Bergen, A., French, L., and Hawkins, L., (2012), they found that the students using the virtual learning environment have a difference in motivation level for using online technologies. Teachers also have to change their teaching practices by using a virtual learning environment.

### Obstacles in the Use of Technology in Teaching and Learning

Kevin Schoepp (2005) states that the use of ICT in teaching and learning environment is a complex process and one that is likely to face some difficulties, known as "barrier".

Khalid Abdullah Bingimals (2009), found that the major obstacles in the successful integration of ICT in teaching and learning is the lack of confidence, lack of efficiency and lack of access to resources. Since confidence, efficiency and accessibility have been found to be a critical component in the integration of technology in schools, ICT resources such as software and hardware, an effective professional development, sufficient time, and technical support should be provided to teachers.

Among the obstacles that have been identified are;

- **Teachers Stage Barriers**
  - Lack of confidence
  - Skills of teachers
  - Resistance to change
- **School Level Barriers**
  - Lack of time
  - Lack of effective training
  - Lack of access
  - Lack of technical support

Johari and Siti Norazlina (2010), in their study indicated that among the obstacles that have been identified in the use of computers and ICT in teaching and learning among teachers is the time, attitude, training and facilities.

Moreover, Nor Fadila, Mohd Amin and Chiew Kai Wan (2010), found that the constraints faced by the teachers in the use of multimedia software is the Life Skills and ICT skills of teachers and technical problems of the software.

Generally, a number of studies have identified a variety of factors such as lack of computers, lack of time, technical problems, attitude towards computers, lack of confidence, resistance to change, lack of computer skills and not enough skills on how to integrate ICT in education.

## **RESEARCH METHODOLOGY**

### **Study Design**

This study used a survey method. A descriptive survey using a questionnaire is used to collect the data needed to answer the research questions. Researchers have administered a questionnaire to obtain information for describing the features found in a sample set. The sample consisted of secondary school teachers in Benut, Pontian, and Johor. The completed questionnaire was returned to the researcher and the data was analysed. Findings, conclusions and recommendations were presented.

### **Population, Sample and Area Studies**

#### **Population**

Respondents were selected from the population of secondary school teachers in Benut, Pontian, and Johor. Based on the data obtained from Pontian District Education Office (DEO), the number of secondary school teachers in Benut in February 2014 is 168 altogether for two schools.

#### **Sample Review**

Even though there are many methods of sampling, random sampling was selected. The respondents were 60 teachers from secondary schools in Benut, Pontian, which is 36 percent of the total population. Mohamed Najib (1999) states that as many as 30 percent of the population is already suitable for a sample to be selected.

### **Area of Study**

This study was conducted in two secondary schools around Benut in Pontian. The respondents consisted of 60 secondary school teachers. They were randomly selected. Mohd. Najib (2003) stated that the group was a random array of population groups by location or zone. The example is based on a random state, district, or school level. Researcher chose the school because it was around Benut between the schools located in rural areas.

### **Instrument Review**

In this study, questionnaire is used as a research instrument. The instrument is often used in the study because it is relatively simple compared to other methods. In addition, it is used to get all the information about the facts, beliefs, feelings or other requirements.

The questionnaire is formed using items on the readiness of teachers to use the virtual learning environment (VLE Frog) in teaching and learning as well as the barriers teachers faced.

### **Data Analysis Procedures**

Data was collected through questionnaires. It is analysed based on the objectives and the research questions. The data was analysed with the aid of a computer. The computer program used was the Statistical Package for Social Science (SPSS v.18.0). In addition, the reliability of the questionnaire is tested using the Cronbach Alpha coefficients. Two types of statistics were used to analyse the data which were the descriptive statistics and the inferential statistics. Descriptive statistics were used to look for the frequency distribution and percentage and inferential statistics were used to test the hypotheses.

## **FINDINGS**

### **Readiness Teacher Using Virtual Learning Environment (VLE Frog)**

The willingness of teachers to use virtual learning environment (VLE Frog) in teaching and learning could be seen from three aspects;

- The applicability of the virtual learning environment (VLE Frog) in teaching and learning.
- Effective use of the virtual learning environment (VLE Frog) in teaching and learning.
- Convenient use of the virtual learning environment (VLE Frog) in teaching and learning.

The overall results of the analysis, the level of preparedness of teachers to use virtual learning environment (VLE Frog) in teaching and learning is shown in Table 1.

**Table 1: Levels of Overall Scores, the Frequency and Percentage of the Aspects of the Teachers Using the Virtual Learning Environment (VLE Frog) in Teaching and Learning**

Aspect	Mean Score 1.00–2.33 (low)	Mean Score 2.34–3.66 (moderate)	Mean Score 3.67–5.00 (High)	Mean	Standard Deviation
	(f) %	(f) %	(f) %		
Suitability Virtual Learning Environment (VLE Frog) in Teaching and Learning	(0) 0.0	(48) 80.0	(12) 20.0	3.45	0.36
Effectiveness of the Use of Virtual Learning Environment (VLE Frog) in Teaching and Learning	(1) 1.7	(33) 55.0	(26) 43.3	3.57	0.48
Convenient Use of Virtual Learning Environment (VLE Frog) in Teaching and Learning	(2) 3.3	(56) 93.4	(2) 3.3	3.18	0.34
<b>Average</b>	<b>(1) 1.7</b>	<b>(46) 76.6</b>	<b>(13) 21.7</b>	<b>3.40</b>	<b>0.39</b>
Overall mean is <b>3.40</b> and readiness level using a virtual learning environment (VLE Frog) in the PDP is at a <b>moderate</b> level.					

Based on Table 1, the overall level of preparedness of teachers using a virtual learning environment (VLE Frog) in teaching and learning is at a moderate level with the mean score is 3.40. Only 21.7% have a high willingness, 76.6% of the teachers are at moderate level and 1.7% of the teachers are at a low level.

Based on these findings, it can be concluded that the level of preparedness of teachers using the virtual learning environment (VLE Frog) in teaching and learning is at a moderate level. The teachers have a simple willingness on the use of a virtual learning environment (VLE Frog) in terms of appropriateness, effectiveness and comfort in the process of teaching and learning.

#### **Obstacles in Using Virtual Learning Environment (Frog VLE)**

Obstacles in using the virtual learning environment (VLE Frog) faced by the teachers in the teaching and learning can be seen from five different aspects;

- Lack of confidence
- Inefficient
- Lack of time
- Lack of access
- Less effective training

For a detailed look at the obstacles faced by teachers in the use of the virtual learning environment (VLE Frog) in teaching and learning in every aspect as well as a descriptive analysis of each aspect done and discussed in the following sub-topics;

**Table 2: Level of the Overall Score, Frequency, Percentage and Standard Deviation of the Obstacles Teachers Using a Virtual Learning Environment (VLE Frog) In Teaching and Learning**

Aspect	Mean Score 1.00–2.33 (low)	Mean Score 2.34–3.66 (moderate)	Mean Score 3.67–5.00 (High)	Mean	Standard Deviation
	(f) %	(f) %	(f) %		
Lack Of Confidence	(20) 33.3	(34) 56.7	(6) 10.0	2.66	0.84
Inefficient	(20) 33.3	(21) 35.0	(19) 31.7	2.91	1.07
Lack of Time	(10) 16.7	(20) 33.3	(30) 50.0	3.62	1.70
Lack of Access	(8) 13.3	(18) 30.0	(34) 56.7	3.53	0.93
Less Effective Training	(14) 23.4	(23) 38.3	(23) 38.3	3.14	0.82
<b>Average</b>				<b>3.17</b>	<b>1.07</b>

Based on Table 2, obstacles teachers were facing with the use of virtual learning environment (VLE Frog) in teaching and learning was at a moderate level with the mean was 3.17. In terms of ratios, the highest barriers faced by teachers is the lack of time constraints of the overall mean score was 3.62, followed by lack of access with the mean score was 3.53 and resistance training is less effective with the mean score was 3.14. The lowest barrier is lack of confidence with the overall mean score was 2.66.

Based on these findings, it can be concluded that the obstacles faced by teachers using a virtual learning environment (VLE Frog) in teaching and learning is at a moderate level but the highest barriers faced by teachers are barriers of lack of time and lack of access barriers, followed by barrier with effective training, barriers to low efficiency and lack of confidence barrier.

**Relationship between Readiness Level Teachers with Obstacles Faced by Teachers to Use Virtual Learning Environment (VLE Frog) In Teaching and Learning**

The relationship between the level of preparedness of teachers and the obstacles faced by teachers to use virtual learning environment (VLE Frog) in teaching and learning was examined. The researchers have used Guilford guidelines described in Chapter 3 before responding to the question studies made. The results were shown in Table 3.

**Table 3: The Relationship between the Level of Preparedness of Teachers with the Obstacles Faced By Teachers to Use Virtual Learning Environment (VLE Frog) In Teaching and Learning by Using Pearson Correlation**

		Readiness Level Teachers	Obstacles Teachers
Readiness Level Teachers	Pearson correlation	1	-.503**
	<i>Sig. (2-tailed)</i>		.000
	N	60	60
Obstacles Teachers	Pearson correlation	-.503**	1
	<i>Sig. (2-tailed)</i>	.000	
	N	60	60

\*\* Correlation is significant at the 0.01 level (2-tailed)

Through the analysis of hypothesis testing for correlation has shown that there is a significant relationship between the level of preparedness of teachers with the obstacles faced by teachers to use virtual learning environment (VLE Frog) in teaching and learning in secondary schools, where  $r = -0.503$ , and  $p = 0.000 < 0.01$ . In addition, based on the correlation table has been discussed in Chapter 3, when the value of  $r = -0.503$ , then this value is in the range of 0.40 - 0.69, which is in a simple but powerful.

Moreover, the negative sign on the value of  $r$  also showed that the correlation is a negative or inversely proportional. When the level of preparedness of teachers was low, barriers were high and if the barriers were high, the readiness level was low. This indicates that there is a significant but negative relationship between the level of preparedness of teachers with the obstacles faced by teachers to use virtual learning environment (VLE Frog) in teaching and learning. Therefore, the null hypothesis is rejected.

## **DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

### **Teacher Readiness Level Using a Virtual Learning Environment (VLE Frog) in Teaching and Learning**

Referring to the first research question, the study was conducted to see to what extent the willingness of teachers to use a virtual learning environment (VLE Frog) in schools. It showed that the overall mean obtained for the appropriateness, effectiveness and comfort is 3.40 and the standard is 12.39. In terms of the mean given, the researcher can see that the readiness of teachers to use the virtual learning environment (VLE Frog) is at a moderate level.

This finding is consistent with findings by Mohd. Izham and Noraini (2007), who found that readiness of science teachers to use computer-based information technology in the secondary schools in the district of Hulu Langat, Selangor is at a moderate level.

Low level of preparedness of teachers in using ICT in the teaching and learning lead to hard work among teachers. Therefore, teachers should always be prepared to keep up with the paradigm shift in the development of teaching and learning using the Frog VLE.

### **Obstacles Faced By Teachers in Using Virtual Learning Environment (VLE Frog) in Teaching and Learning**

According to the second research question, the study was conducted to see the obstacles faced by teachers in the use of the virtual learning environment (VLE Frog) at the school. The data analysis showed that the highest mean barrier is lack of time with the mean was 3.62 and the standard deviation was 1.70. In terms of the mean value obtained, researchers were able to determine that indeed lack of time was at a high level, followed by lack of access with its mean was 3.53 and the standard deviation was 0.93, followed by ineffective training (mean = 3.14), inefficient (mean = 2.91) and lack of confidence (mean = 2.66).

The result was also similar to the findings made by Muhammad Rusydi (2008) in his study, "Why do the teachers unlikely to use the media?", The teachers thought that it was inconvenient to use the media as a medium of teaching because it requires a long time for the preparation process.

It is also supported by a study made by Khalid Abdullah Bingimlas (2009). He found that among the obstacles faced by teachers are the low levels of confidence, incompetence and teacher resistance to change. In addition, lack of time, lack of effective training, lack of access and lack of technical support also seem to challenge the use of VLE Frog.



## **Relationship between Readiness Level Teachers with Obstacles Faced by Teachers in Using Virtual Learning Environment (VLE Frog) in Teaching and Learning**

The findings of the third research question showed a modest but strong relationship. Negative symbol for the value of  $r$  showed that the correlation is a negative correlation. If the level was low, then the teacher educator's barriers were high and when the barriers of high school teachers were high, the readiness level was low. This indicates that there is a significant but negative relationship between the level of preparedness of teachers with the obstacles faced by teachers to use virtual learning environment (VLE Frog) in teaching and learning.

## **SUMMARY AND RECOMMENDATIONS**

### **Summary of Survey Results**

Referring to the findings in this study, it can be concluded that the level of readiness of secondary school teachers in Benut, Pontian, and Johor is modest. It can be seen from three aspects, namely the willingness of (i) the appropriateness of the use of a virtual learning environment (VLE Frog) in teaching and learning, (ii) the effectiveness of the use of a virtual learning environment (VLE Frog) in teaching and learning, and (iii) convenient use of virtual learning environment (VLE Frog) in teaching and learning. Undoubtedly, there are several obstacles faced by teachers in the use of virtual learning environment (VLE Frog) in teaching and learning, such as lack of confidence, less efficiency, lack of time, lack of access and ineffective training. Among the five hurdles, lack of time is the most challenging ones followed by lack of access, lack of effective training, inefficient and the lowest level of challenge is the lack of confidence.

The results of this study are hoped to give a true picture to the relevant authorities such as the Ministry of Education, Department of Education, District Education Office, Division of Educational Technology, Teachers' Centre and the school management in order to monitor and deal with any problems that might arise.

Therefore, to further strengthen the implementation of the use of a virtual learning environment (VLE Frog) in teaching and learning in schools, the researchers are able to provide some suggestions for improvement and for further research. This is to ensure that all the constraints could be addressed and the education policy which has been introduced recently could be implemented effectively.

### **Suggestions for Improvement**

There are some suggestions for improvement in the teaching and learning using a virtual learning environment (VLE Frog) at school. Among the recommendations that can be addressed and taken into consideration by the relevant parties are as follows:

### **Management and Implementation of a Virtual Learning Environment (VLE Frog)**

Currently there are some departments from the Ministry of Education (MOE), the Division of Educational Technology and Teacher Centres involved in providing training and development of teaching and learning using a virtual learning environment (VLE Frog) to teachers, but there are many constraints that they are facing. In addition, the distribution of information on the use of a virtual learning environment (VLE Frog) and its effectiveness needs to be improved.

At the school level, the school management should play a more active role in taking action to ensure that the use

of a virtual learning environment (VLE Frog) in teaching and learning and also in the administration side. So, the school management has become more mature in using the virtual learning environment (VLE Frog) in school.

### **Training Requirements**

Lack of effective training is one of the obstacles in the use of a virtual learning environment (VLE Frog) among teachers in schools. Teachers are the backbone of the system. Moreover, another aspect that must be considered in designing training is a change in thinking and attitude towards the use of a virtual learning environment (VLE Frog). The findings showed that teachers are not using a virtual learning environment (VLE Frog) even though the skills are there and equipment is adequate.

### **Appointment of Facilitators**

A facilitator has to be appointed for the purpose of improving the efficiency of teachers using the virtual learning environment (VLE Frog). Task of the facilitator should be the best measure of success to help teachers implementing a virtual learning environment (VLE Frog) easily and effectively.

### **SUGGESTIONS FOR FURTHER STUDY**

There are many constraints that led to a lot of things that cannot be assessed in this study since this study is an initial one. Therefore, the researchers hope that some of the proposed studies could be extended based on the following areas for the future:

- Future research can be conducted in more than one area or states in Malaysia to provide a thorough improvement.
- In addition, studies on the willingness of teachers of other aspects can also be carried out to see a different perspective on the willingness of teachers to use virtual learning environment (VLE Frog) in teaching and learning in schools.
- Other advanced study is the study of an appropriate method undertaken to implement the teaching and learning using a virtual learning environment (VLE Frog).

### **CONCLUSIONS**

Teachers are implementing major national education policy in our country. Therefore, the development of new teaching and learning requires a shift in the role of ICT-based education and the teaching profession. The country needs a paradigm shift for teachers especially skills in ICT knowledge. The use of virtual learning environment (VLE Frog) in teaching and learning cannot be effectively implemented if we do not get the full cooperation and commitment of all stakeholders, especially teachers. The readiness and awareness are needed among the educators to improve teaching and learning to a higher level in schools.

In addition, a comprehensive policy should be implemented by the Ministry of Education, which requires teachers to use ICT in teaching and learning, especially the use of a virtual learning environment (VLE Frog). Therefore, training of teachers is required to enhance their skills and knowledge in integrating ICT into teaching and learning. Training should include an ongoing training, which allows teachers to share the skills and knowledge with the colleague from other districts.

Thus, a systematic monitoring should be established and operated by an independent body to monitor the implementation of a virtual learning environment (VLE Frog). The monitoring system is a comprehensive system of monitoring the level of development and move on up to the level of user implementation.

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