

## Accounting Teacher Self Efficacy, Usage, Teaching Preference and Skill towards Virtual Learning Environment in Education

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### Abstract

*The government through the Ministry of Education Malaysia promotes the use of technology in the teaching and learning practices among teachers as medium to connect and supports e-learning activities between students and teachers. Accordingly, this study aimed to explore teachers' usage of virtual learning environment, assess teachers' teaching preferences and ICT skills as well as examine the effect of teachers' self-efficacy towards the use of virtual learning environment. The study used survey methods to collect data. The respondents of the study were selected using a purposive sampling method. 156 accounting teachers from schools in Perak, Kedah and Selangor were selected as the sample. Data were analyzed using descriptive analysis that measured mean values, percentages, frequency and standard deviations. Inference tests involving Pearson Correlation was used to analyze relationships between variables. The findings revealed that teachers tend to favor modern/contemporary learning styles. However, the frequency of use of Frog VLE among teachers is still low while the level of Frog VLE usage among teachers is moderate. The ability of teachers to handle ICT applications in teaching is at moderate level. Furthermore, result showed that there is a significant association between teachers' self efficacy and the usage of VLE Frog. Therefore, teachers need to be given ongoing training and motivation to promote and improve their skills using the latest technology. Infrastructure facilities in schools need to be enhanced so that the implementation of e-technology learning can encourage effective educational processes.*

**Keywords:** Frog VLE, accounting teacher, self-efficacy, technology, virtual learning

### Introduction

The Ministry of Education (KPM, 2019) through the RMK-12 aims to achieve the goal of making Malaysia the best educational hub through various programs and approaches by organizing various educational programs and symposiums to improve the quality of education. The 7th amendment to the Malaysian Education Development Plan 2013-2025 (PPPM) states that one of the government's intentions is to promote the use of ICT to improve the quality of delivery in the education system. Information and communication technology is one of the main focus of the ministry as various methods and materials can be used in teaching and learning processes such as virtual learning, e-learning, distance education, blogs, forums and e-books (Adenan, Kamariah, Zechariah & Aida Suraya, 2011). In response to the PPPM recommendations, the ministry has a tendency towards an online-based education system by encouraging the use of Frog VLE in every school (Norashikin and Kamisah, 2016; Simin & Ibrahim, 2015). The use of Frog VLE in the education world has been one of the mediums to vary teaching and learning practices (PdPc). The use of technology in the learning system is highly encouraged as technology tools and equipment become the medium of communication between students and teachers (Norashikin & Kamisah, 2016).

In this regard, through an initiative undertaken by YTL Communications Sdn Bhd, the Ministry of Education Malaysia (KPM) has organized a project of 1BestariNet Services Project with the aim of enhancing and updating the implementation of ICT in schools (Laporan Audit Negara, 2014). Under the 1BestariNet project, 10,000 schools in Malaysia will have high-speed 4G Internet access as a platform for virtual learning process, providing high-speed internet connection and access to world-class integrated education solutions (Frog Asia, 2014). The government's move towards a technology-based education system enables Malaysia to strengthen the education and delivery system through the

Virtual Learning Environment or also known as the Frog VLE. Every school across Malaysia will be equipped with 4G mobile Internet facilities (Nurul Farhana, 2013; Campbell, Al Harthi, & Karimi, 2015). According to Nurul Farhana (2013), the virtual learning environment (VLE) is considered as a platform for educational transformation to be implemented by the Ministry of Education Malaysia as it is a positive step in education in Malaysia in meeting the Fourth Industrial Revolution (IR4.0).

Frog VLE is a web-based system that resembles real-world learning through the integration of conventional education into virtual learning (Thah, 2014). Virtual learning environment (Frog VLE) is a web-based communication platform that enables students to access different learning information regardless of time and place such as program information, course content, discussion sites, document sharing system and learning resources (Frog Asia, 2014). This Frog VLE application not only supports e-learning activities such as delivering information, managing course materials, and conducting assessments but also provides a rich media environment with graphics, video, animation, sound, and hyperlinks (Berns, Gonzalez, & Camacho, 2013). Frog VLE is also a flexible cloud-based platform that can be accessed anywhere, from within the school or outside the school. For example, files and data stored in the cloud can be accessed anywhere and anytime via internet access (Ministry of Education Malaysia, 2012). Through the virtual learning environment, every student has the opportunity to access information and materials related to the given subject, more easily and in depth (Shafiezul&Fariza, 2015). In addition, Frog VLE also offers a number of benefits to teachers such as having course management tools, forums and group discussions, submission of assignments, course evaluations, management of educational resources and even tracking student participation (Georgouli, Skalkidis, &Guerreiro, 2008)

Virtual learning environments are considered to be able to accommodate or change the educational and pedagogical landscape (Campbell, Al Harthi&Karimi, 2015; Berns, Gonzalez, and Camacho, 2013). This is because the use of Frog VLE not only transmits learning content to students but also creates relationships among learning communities between teachers, students and the learning content itself (Berns, Gonzalez &Camacho, 2013). The application of Frog VLE in schools especially in the classroom is important for students to adapt to new technology-based learning so they will be able to learn better in this virtual environment (Adenan et al., 2011; Hoskins, 2011). In general, most teachers will still use the conventional approach to teaching and learning activities but with the advent of technology, teaching and learning activities have changed from teacher-centered to student-centered learning (Hiong&Umbit, 2015). These changes are made in response to ministries intention to meet educational needs towards the 21st century education (Ahmad et al., 2019; Simin& Ibrahim, 2015).

### **Literature Reviews**

The Frog VLE was introduced by the KPM as a step towards 21st century teaching and learning aimed at improving the quality of national education to be comparable with education in developed countries (Ahmad et al., 2019). The implementation of Frog VLE is expected to change the teaching pattern of teachers in the classroom where teachers should maximize the use of e-learning in order to give positive impact on students, teachers and administrators (Georgouli, Skalkidis, &Guerreiro, 2008; Ila Husna, 2015). Through the use of Frog VLE by teachers, they are supporting KPM efforts, improves administration and departmental planning by sharing the resources with them as well as implementing teaching collaborations with other teachers (Adenan et al., 2011). In addition, teachers' participation in ICT-related development courses and training helps them develop self-confidence and ICT skills can be enhanced through the use of the Frog VLE application (Becta, 2005).

Previous studies have shown that there are many benefits to teachers when implementing Frog VLE (Pilkington et al., 2000; Russel, 2005; Becta, 2005; Hoskins, 2011). According to Rusell (2005), the use of Frog VLE enables teachers to share their personal views and experiences, and increase participation and work performance (Pilkington et al., 2000). It also improve student self-learning when teachers are committed to the use of technology (Becta, 2005). Whereas Selinger (1997) suggests that the use of Frog VLE enhances teachers' self-confidence and promotes collaborative practice in teaching. The use of Frog VLE can also encourage passive learners to contribute ideas and suggestions creatively and effectively, which indirectly will facilitate teachers in teaching and learning process (Selinger, 1997). In addition, Hoskin (2011) and Jacobsen and Kremer (2000) states that students gain through

effective use of Frog VLE where it is accessible anywhere and anytime. The use of ICT can be enhanced through understanding, writing and presentation skills (Watts & Lloyd, 2000). Gibbs (1999) suggests that learning styles can be diversified with new approaches introduced such as online for forum discussion.

By using Frog VLE, where online learning is applied to the teaching and learning activities, the role of students and teachers indirectly changing from traditional teaching to modern/ contemporary teaching (Hiong&Umbit, 2015; Norzaira, Zolkefli&Kasri, 2017). Students' learning time changes from regular and fixed-scheduled, to a more flexible and independent learning times. The role of the teacher also changes from being a teacher to a facilitator (Hoskins, 2011). Teachers need to maximize the use of Frog VLE in order to have a positive impact on educational delivery (Ila Husna, 2015). Therefore, teachers' ability in realizing educational goals and aspirations is a key factor in determining successful implementation of the virtual learning environment in schools (Mahizer, Siti Norazlikha& Noraini, 2016).

To ensure that the use of Frog VLE is at the optimum level, all stakeholders including school administrators, teachers, students and parents should play their role in achieving this aspiration. However, recent studies have found that the use of Frog VLE applications in primary and secondary schools is not at good state (Chua &Montalbo, 2014; Noraini et al., 2015), although studies show teachers have a positive perception towards the usage of Frog VLE (Cambell, Al Harthir&Comacho, 2013). This could be due to the issues and challenges faced in implementing Frog VLE in teaching and learning process such as limited internet access and lack of equipment accessibility (Mahizer&Azli, 2016). These problems prevent teachers from using the Frog VLE application in school as it will lead to waste of time and would add burden to them.

In addition, previous studies have found that factor such as infrastructure amenities and teacher self-efficacy, as extrinsic and intrinsic factors that influence the use of Frog VLE among teachers (Compeau& Higgins, 1995; Albion, 2001). Teacher-efficacy refers to the level of confidence that the individual has in performing certain actions (Bandura, 1982, 1997). Bandura (1982) states that the expectation of self-efficacy influences a person to initiate activities and the effort and perseverance required to succeed in carrying out the activity. Self-efficacy acts as a motivating force in one's life (Kankanhalli et al., 2005). Compeau and Higgins (1995) and Compeau and Huff (1999) define self-efficacy in computer aspects, as an individual act on their ability to use computers in various information technology contexts. Thus, low confidence in using the Frog VLE application makes a teacher or individual more likely to feel failed or frustrated, thus affecting their expectation and ability to continue using the Frog VLE application. Furthermore, according to Albion (2001), self-efficacy factor plays an important role in the usage of technology among teachers. A study conducted by Liaw et al., (2007) shows that teachers have a positive attitude towards e-learning and that it includes self-efficacy and perceived usefulness.

Therefore, the school needs to pay attention and appropriate action must be taken against the problems and challenges faced by teachers in applying the Frog VLE. The aspect of ICT equipment in schools is an important aspect that should be taken into account by school administrators to ensure optimal use of Frog VLE (Norzaira, Zolkefli&Kasri, 2017). In addition, the level of teachers' readiness to apply Frog VLE in teaching and learning process is another aspect. In order to encourage students to use Frog VLE as a learning medium, teachers should be the primary motivators for students to indirectly receive self-centered learning (Mahizer&Azli, 2016). The next aspect is the readiness of students to use this application and the willingness of parents to monitor and help children using the Frog VLE (Nurul Farhana, 2011). Every parent needs to have ICT skills so they can communicate with school administrators and teachers to monitor their children and learn at school. The responsible party should therefore play a role in providing the infrastructure for improving the quality of education through the learning process (Norzaira, Zolkefli&Kasri, 2017). However, the question arise is whether teachers are ready to implement the ministry's plan to integrate technology-based education. Given the importance of making learning more meaningful to students, it is important to study teachers' readiness, use and self-efficacy in the implementation of virtual learning in the classroom. Therefore, this study attempts to answer questions related to the level of usage of Frog VLE among teachers, assessing teachers' learning preferences and skills in using the Frog VLE application in teaching and learning, and examining the relationship between teachers' self-efficacy on usage of Frog VLE application.

### ***Frog Vle Fitness as E-Learning Platform***

E-learning is defined as a learning alternative where structured training, education and information are integrated and communicated by computers through an internet network where it can be implemented through websites, social networks, CD-ROMs, hard drives or through systems developed by an organization (Jamaluddin, 2000). E-learning is the best channel that can be used to facilitate teachers and students to communicate actively which lead to a successful interaction between teacher and student (Shafiezul&Fariza, 2015; Chang, Chen & Hsu, 2011). Terms such as VLE - Virtual Learning Environment, CMS - Course Management System, LCMS - Learning Content Management System, LSS - Learning Support System, LP - Learning Platform, MLE - Managed Learning Environment are among the terms of the internet-based delivery system and this system uses the concept of e-learning (Kanninen, 2008). There are various e-learning platforms used by schools or institutions of higher learning locally and internationally. Among them are VLE (Frog VLE, Moodle, Blackboard and Web CT), CMS, LMS and LCMS (Ila Husna, 2015).

The Frog VLE application is a hypermedia-based teaching program that utilizes systems or web resources to create meaningful learning environments (Chang, Chen & Hsu, 2011). E-learning can be recognized as one of the earliest types of web applications for giving instruction via the internet. It uses telecommunications technology to convey information in education and training (Lai et al., 2015). As pointed out in previous studies (Shafiezul&Fariza, 2015; Hiong&Umbit, 2015; Thah, 2014; Hoskins, 2011), Frog VLE is the use of electronic media such as Internet, DVD, CD-ROM, mobile phones and other technologies used for teaching and learning to allow students access to knowledge anywhere and anytime remotely. The main difference between the e-learning and the traditional learning environment is the level of technology usage. Also, it transfer control and responsibility of the learning process to every student as this application gives them the opportunity to learn anytime and anywhere (Berns, Gonzalez and Comacho, 2013).

In a study that examines the implementation of Frog VLE in United Kingdom schools, Read et al., (2013), found that the primary function of Frog VLE is to serve as a “repository” for teaching and assessment materials. However, Frog VLE has limited usage in the aspects of cooperative learning (Chang et al., 2011). Frog VLE application is one of the components that give "added value" in terms of teaching and learning and student experience itself (Williams et al., 2000). Although there are many types of e-learning platforms, Thah (2014) considers Frog VLE as one of the most effective and appropriate platforms in the context of teaching in schools compared to other e-learning. In addition, many parties are also benefiting from the use of Frog VLE application such as school administrators as they can use this tools for school management activities (memos), making it easier for teachers and students to interact between themselves. Furthermore, the parents also can see all activities and information organized by the school through this Frog VLE (Kanninen, 2008; Wong et al., 2013). The use of Frog VLE provides unique opportunities and interesting experiences in the teaching process for a teacher, as well as learning activities for a student to be more interactive and engaging than traditional teaching methods in the classroom (Kankanhalli et al., 2005). Thus, teachers' teaching and learning activities are not only based on learning aids in a classroom, but extend beyond it with the help of Frog VLE.

### ***Benefits of E- Learning Environment (Frog Vle)***

There are many benefits and goodness of using the Virtual Learning Environment (Frog VLE) application if implemented properly (Siti Salbiah et al., 2010; Hiong&Umbit 2015; Norashikin&Kisah, 2016). Kankanhalli et al., (2005), discusses the benefits of Frog VLE as this application enables easy access to information resources, provides unlimited learning time, users can use Frog VLE anywhere and many educational opportunities will be provided. Frog VLE offered advantage of enabling students and teachers to communicate online to develop their understanding and analysis skills (Hrtonova et al., 2015). Hrtonova et al., (2015) also explained that the Frog VLE is able to maximize student reflection and encourage their progressive thinking.

According to a report by British Educational Communications and Technology Agency (Becta) that conducted a study about virtual learning environment found that classes with online learning elements achieved more learning outcomes than classroom learning. The report outlines two positive

effects derived from e-learning. The first effect is students are more ready to learn with high focus and the second effect is the integration of students into the process of learning through more flexible access (Becta, 2005). Hrtanova et al., (2015), have identified three top benefits of using virtual learning environment namely (i) better information and communication organization across the school, (ii) higher parental involvement where there is increased learning support at home and (iii) increase student opportunities for independent and self-learning.

The effectiveness of the Frog VLE enables teachers and principals to improve their teaching practices towards a new teaching and learning platform as they can access local and international learning resources and communities by adjusting according to school and student needs (Ministry of Education Malaysia, 2014). The use of the Frog VLE designed by the teacher itself is able to attract students to learn to enhance their knowledge (Berns, Gonzalez and Camacho, 2013; Shahfiezul and Fariza, 2015). In addition, the Frog VLE application has various ways of communicating between members of the community directly through a forum page where each student and teacher can access the site and then discuss the topic. Each student can also communicate to each other even though they are in different places (Shahfiezul & Fariza, 2015). Indirectly, the communication occurs indicates a positive relationship between teacher and student and student with his or her peers. According to Cuban et al., (2001), Frog VLE is able to create a sense of responsibility and collaboration among students as this student-centered teaching method can stimulate creativity and innovation among students while enhancing their collaboration skills.

Looking at the context of Frog VLE's ease of use, the literature shows that it can serve as a new learning platform for students and able to replace other communications such as Facebook and BlogSpot social sites for information and communication sharing purposes (Thah, 2014; Cambell, Al-Harthir & Karimi, 2013; Simin & Ibrahim, 2015). This is because the Frog VLE application created by the ministry has the same concept as other social sites (Pilkington et al., 2000). Hoskins (2011) emphasized that this software is user-friendly software to help facilitate delivery of information. Thus there should not cause any problem for unskilled users. Previous studies have shown that using e-learning can enhance students' understanding and motivation in learning (Nurul Farhana, 2013; Mahizer, Siti Norazlikha and Noraini, 2016). This view was also supported by Wong et al., (2013) who suggested that the Frog VLE had a positive effect on teaching and learning activities.

However, there are also issues of student dissatisfaction with the use of Frog VLE. For educational purposes, student satisfaction is an important element of Frog VLE implementation. Therefore, Lai et al., (2015) have outlined the minimum standard requirements in implementing Frog VLE where satisfaction can be achieved through interactive modules and well-planned, organized and clear teaching and learning process. Moersch (2001), however, reports that although the majority of students are aware of the positive effects of using VLE, there are still students who are more comfortable learning using the traditional approach. This may be due to the fact that a student is less involved in the Frog VLE application and due to the lack of exposure of the Frog VLE by teachers in their teaching and learning activities (Ashinida et al., 2004). Therefore, schools, teachers and administrators need to expose students to benefits of using Frog VLE in their teaching and learning process. This Frog VLE application is able to enhance students and teachers' self-esteem, enhance their readiness, encourage reflection and enhance ICT skills among students and teachers (Chang et al., 2011; Mohd Arif et al., 2011; Shafiezul & Fariza, 2015).

## Methodology

This study used quantitative survey methods to answer the research questions. Quantitative methods aim to determine the relationship between each variable within a population (Uma & Roger, 2010). The survey method can provide descriptive information to the researcher and it is an excellent method of research that aims to collect information directly from respondents (Wiersma, 2000). The questionnaire was used to get respondents' views on usage, learning preferences, ICT skills and respondents' self-efficacy in using the Frog VLE application. The questionnaire was used to produce consistent and reliable items, have a high level of confidentiality, the respondents receive similar questions, and the time could be used effectively (Ary, Jacobs & Razavieh, 2002; Uma & Roger, 2010).

Purposive sample selection was conducted and 156 accounting teachers were selected from 38 schools from the states of Perak, Kedah and Selangor. The selection of teachers as a sample of studies was made

on the basis that teachers are the agents of change in the use of the Frog VLE application and the role of teachers is crucial to the success of this application. The instruments used in this study were adapted from the studies of Simin and Ibrahim (2015) and Lai et al., (2013) and were modified and refined according to the needs of the study. The questionnaire comprised of four sections, sections A, B, C and D where section A provides questions related to the profile of the respondents. Whereas, part B provides questions related to frequency of use, teaching style preference and ICT skills. Sections C asked questions related to the use of Frog VLE and section D provides questions about teachers' self-efficacy. This study uses a 5-point Likert Scale that involves a scale of 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly Disagree to measure teacher agreement on usage, learning preferences, skills and self-efficacy of teachers in using Frog VLE. The data collected will be analyzed using descriptive analysis (frequency, percentage, mean and standard deviation) and inference analysis, of Pearson Correlation. Tool for data analysis (SPSS, SEM AMOS, PLS etc)

### Reliability

To determine the reliability value, the researchers used Cronbach Alpha's test. Value of items ranged between 0.71 and 0.99, will be considered as the best level of reliability. Nevertheless, Cronbach Alpha reliability coefficients above 0.6 are still acceptable for use in actual studies (Bond & Fox, 2007).

Table 1: Reliability Test

Variables	Alpha Cronbach values
Usage	0.922
Learning Style Preferences	0.879
Self-Efficacy	0.864

Table 1 shows that the Cronbach Alpha reliability scores on each questionnaire ranged between 0.864 and 0.922. It indicates that the questionnaire items were reliable in conducting the actual study. Data were collected over two months through the distribution of questionnaires to related schools. Respondents were given 3-5 days to answer and return the questionnaire to facilitate the data collection and analysis process. After the questionnaire was completed, data could be collected for analysis to obtain the findings of the study.

Descriptively analysis is conducted to explain the profile of the respondents, the tendency of using Frog VLE in teaching and learning activities, the preferences of teaching and learning methods and the level of ICT skills towards using Frog VLE. Descriptive analysis was used to derive mean values, frequency, standard deviation and percentage between variables and the items used in this study (Hair et al., 2010). The mean score obtained in this analysis will be validated using the scale shown in Table 2 to measure the level of usage, priority of teaching and learning method, and the respondents' ICT skills. Statistical analysis of Pearson Correlation was used to examine the relationship between self-efficacy and use of Frog VLE among respondents.

Table 2: Mean Scores and Measures of Frog VLE Usage Level among teachers

Score Mean	Interpretation
0.00 – 2.33	Low
2.34 – 3.67	Moderate
3.68 – 5.00	High

(Source : Landell, 1977)

### Findings

Based on Table 3, a total of 156 respondents were involved in this study. Of these, 26 (16.7%) were male teachers while 130 (83.3%) were female teachers. In terms of school location, 75 respondents (48.1%) were employed in urban schools while the remaining of 81 respondents (51.9%) teaches in rural schools as shown in Table 4.

*Gender*

Table 3: Distribution of Respondents by Gender

<b>Gender</b>	<b>Number (N=156)</b>	<b>Percentage (%)</b>
Male	26	16.7
Female	130	83.3
<b>Total</b>	<b>156</b>	<b>100</b>

*School Location*

Table 4: Distribution of Respondents by School Location

<b>School Location</b>	<b>Number (N=156)</b>	<b>Percentage (%)</b>
Urban	75	48.1
Rural	81	51.9
<b>Total</b>	<b>156</b>	<b>100</b>

*Frequency of Frog VLE Usage*

Table 5 shows sample distribution based on frequency of Frog VLE usage in schools within a week. A total of 53 respondents (34.0%) stated they had never used Frog VLE in their teaching and learning activities. Meanwhile, a total of 86 respondents (55.1%) had used 1-3 times the Frog VLE application in their teaching and learning activities. This frequency represents the highest number obtained. On the other hand, the frequency of Frog VLE usage between 4-6 times indicated that 11 respondents (7.1%) used Frog VLE. The rest shows a frequent use of Frog VLE (more than 7 times) with only 6 respondents (3.8%). It can be concluded that the frequency of Frog VLE usage in a week exceeding 7 times by the respondents, has the lowest frequency value with only 3.8%.

Table 5: Distribution of Respondents by Frequency of Frog VLE Usage

<b>Frequency of Frog VLE Usage</b>	<b>Number (N=156)</b>	<b>Percentage (%)</b>
0time	53	34.0
1-3 times	86	55.1
4-6 times	11	7.1
7 times and more	6	3.8
<b>Total</b>	<b>156</b>	<b>100.0</b>

*Learning Style Priorities*

Table 6: Distribution of Respondents by Learning Style Priorities

<b>Learning Style Priorities</b>	<b>Number (N=156)</b>	<b>Percentage (%)</b>
Conventional/Traditional	50	32.1
Modern/Contemporary (ICT Usage)	106	67.9
<b>Total</b>	<b>156</b>	<b>100.0</b>

The learning style preferences is categorised into two aspects: Traditional learning style and Contemporary learning style. Table 6 presents findings based on respondents' learning style preferences. A total of 50 respondents (32.1%) favoured a conventional / traditional learning style. Meanwhile, 106 respondents (67.9%) are more likely to adopt a modern / contemporary learning style (ICT use). The findings show that the majority of respondents prefer modern / contemporary learning styles.

*ICT Handling Skills in Teaching*

Table 7: Distribution of Respondents by Ability of ICT Handling in Teaching

Ability of ICT Handling in Teaching	Number (N=156)	Percentage (%)
Low	5	3.2
Moderate	120	76.9
High	31	19.9
<b>Total</b>	<b>156</b>	<b>100.0</b>

In terms of ability of ICT handling in teaching and learning activities, Table 7 indicates that a majority of the respondents (76.9%) had moderate levels of ICT ability. This is followed by 31 respondents (19.9%) with high ICT ability level and only 5 respondents (3.2%) have low levels of ICT ability.

#### *Level of Frog VLE Usage among teachers*

Table 8 shows the level of use of Frog VLE among respondents. The overall mean score is at a moderate level of 3.26. This indicates that the majority of respondents had a moderate level of use of Frog VLE during their teaching and learning process. However, there were two items show high level value. Item “I know what the Virtual Learning Environment (VLE) is” and the 7th item, “I know the Frog VLE application can diversify my teaching techniques” with a mean values of 3.90 (SP) = 0.734 and 3.71 (SD = 0.937) respectively. The second item has the lowest mean value. “I use Frog VLE application in teaching and learning on daily basis” has a mean value of 2.68 (SD = 1.13). whereas, the 3<sup>rd</sup> item “I have used the Frog VLE application for teaching and learnings process at least 3 times” shows a mean value of 2.94 (SD = 1.165) is at moderate level. The findings of the survey found that 46 respondents (29.5%) agree with the 5<sup>th</sup> statement of “I am good at providing interactive learning elements using Frog VLE”. This finding indicates that respondents have uncertainty about using the Frog VLE to integrate interactive learning elements in their teaching and learning activities.

Table 8: Levels of Frog VLE Usage among Teachers

No	Items	Mean	SD
1	I know what Virtual Learning Environment (VLE) is	3.90	0.734
2	I use Frog VLE application in teaching and learning on daily basis	2.68	1.130
3	I have used the Frog VLE application for teaching and learnings process at least 3 times	2.94	1.165
4	The Frog VLE application can help me in the process of teaching and learning	3.33	1.043
5	I'm good at providing interactive learning elements using Frog VLE	3.04	1.028
6	I'm good at using Frog VLE to provide a more open and flexible learning environment for teaching and learning purposes	3.10	1.088
7	I know the Frog VLE application can diversify my teaching techniques	3.71	0.937
8	I'm good at sharing teaching aids in the Frog VLE application	3.09	1.012
9	I am good at using technology such as Frog VLE in creating collaborative learning (group)	3.19	1.002
10	I am interested in Frog VLE-based learning that will produce more creative and innovative students	3.65	0.913
	<b>Overall</b>	<b>3.26</b>	<b>0.779</b>

Although moderate overall level of agreement is demonstrated in the use of Frog VLE in teaching and learning activities on a daily basis, most teachers agree and are interested in using Frog VLE-based learning. It is because it can produce more creative and innovative students (51.9%) and teachers know that by using Frog VLE application, they produce a variety of teaching techniques in the classroom

(53.2%). For item 5 regarding skills of providing interactive learning elements using Frog VLE and sharing teaching materials using Frog VLE (item 8) show a moderate level of Frog VLE Usage among Teachers with mean scores of 3.04 (SD = 1.028) and 3.09 (SD = 1.012). Table 9 shows the summary of the level Frog VLE usage among teachers.

Table 9: Distribution of Frog VLE Usage Level among Teachers

Level	Frequency (N=156)	Percentage (%)	Mean	SD
Low	24	15.3	-	-
Moderate	68	43.5	-	-
High	64	41.0	-	-
Overall	-	-	3.26	0.779

*Teacher Self-Efficacy towards the Usage of Frog VLE*

Results in Table 10 shows that the highest mean score of teacher self-efficacy on Frog VLE usage is the item “Implementation of teaching and learning process using Frog VLE is a good approach” of 4.08 (SD = 0.622). The mean value of item 1 is at the high level which is between 3.35 and 5.00. This is because teachers realized that using the Frog VLE application is a good method or teaching strategy that is effective in the classroom as well as beyond schools session. The lowest mean value for teacher self-efficacy was in the 5th item “I was able to overcome any small obstacles I had when using Frog VLE in the classroom” of 3.43 (SD = 0.812) which represents a mean value at the moderate level which is between 2.34 and 3.67.

Table 10: Self-efficacy of Teacher towards Usage of Frog VLE

No	Items	Mean	SD
1	Implementation of teaching and learning process using Frog VLE is a good approach	4.08	0.622
2	I enjoy using Frog VLE in the teaching and learning process	3.59	0.802
3	I believe Frog VLE can create an exciting learning environment	3.95	0.660
4	I am comfortable in guiding my fellow teachers to use Frog VLE	3.58	0.901
5	I was able to overcome any small obstacles I had when using Frog VLE in the classroom	3.43	0.812
6	Understanding students' learning styles helped me in designing the learning process using Frog VLE	3.67	0.805
7	I am able to create meaningful teaching and learning activities when using Frog VLE	3.62	0.831
	<b>Overall</b>	3.70	0.601

Furthermore, item “I am comfortable in guiding my fellow teachers to use Frog VLE” is at a moderate level with mean score of 3.58 (SD = 0.901). For the third item “I believe Frog VLE can create an exciting learning environment”, most teachers (65.4%) agree with the statement with a mean score of 3.95 (SD = 0.660). Whereas, for item 6 “Understanding students' learning styles helped me in designing the learning process using Frog VLE” and item 7 “I am able to create meaningful teaching and learning activities when using Frog VLE” show a moderate level with a mean score of 3.67 (SD = 0.805) and 3.63 (SD = 0.831) respectively.

The result in Table 10 also shows that the overall mean score for teacher self-efficacy towards the usage of Frog VLE in schools is 3.70 which is at high level (i.e. between 3.35 and 5.00). This indicates that self-efficacy is one of the factors contributing towards the application of Frog VLE in teaching and learning in schools.

Table 11: Summary of Teacher Self-Efficacy towards Frog VLE Usage

Level	Frequency (N=156)	Percentage (%)	Mean	SD
Low	4	2.5	-	-
Moderate	58	37.2	-	-
High	94	60.2	-	-
Overall	-	-	3.70	0.601

*Relationship between Self-Efficacy and Frog VLE Usage*

Table 12 shows the relationship between teacher self-efficacy and Frog VLE usage in teaching and learning activities. The results revealed that teacher self-efficacy was significant at 5% significance level with p-value of 0.000 and coefficient value of 0.616. The correlation value of  $r = 0.616$  shows that there is a high degree of correlation between teacher self-efficacy and the use of Frog VLE. It also indicates a positive or negative relationship between teacher self-efficacy and the use of Frog VLE as it ranges from 0.5 to 1.0.

Table 12: Correlation between Teacher Self-Efficacy and Frog VLE Usage

	Frog VLE Usage	Teacher Self-Efficacy
Frog VLE Usage	1	0.616
Sig		0.000
Teacher Self-Efficacy	0.616	1
Sig	0.000	

\*Significant at 0.05 significance level, N = 156

**Discussion**

MOE has introduced the Frog VLE application in schools across Malaysia with an estimated 10,000 schools involved (KPM, 2012). With the introduction of this new technology, teachers are seen to play a vital role in the use of Frog VLE applications in their teaching and learning activities. Frog VLE was introduced by MOE as one of the steps towards 21st century teaching and learning with aims to improve the quality of education in Malaysia to be comparable to those of other countries in the aspect of education delivery.

*Level of Frog VLE Usage in Teaching and Learning*

Overall, findings show that the level of Frog VLE usage among teachers is at a moderate level. Although teachers have a general knowledge of this applications, they rarely use the facilities provided to them. The findings of this study are in line with the study of Lai, Noormawati, Rashidah and Noridah (2015) which found that teachers have prior knowledge and exposure to the use of Frog VLE but the frequency of use of this application is still low. The results shows low usage of Frog VLE could be due to the challenges and problems faced such as the infrastructure that not supporting the use of this application in schools. Most teachers access the Frog VLE application only three times a week during their teaching and learning activities. This finding is in line with the third annual Auditor-General Report (2013), which reports a very low level (i.e. 4%) of Frog VLE usage among students, teachers and parents. Looking at the aspects of learning styles, the majority of teachers are more likely to choose and prioritize modern/contemporary learning styles (ICT use) than conventional/traditional learning styles. Teachers also have a good knowledge of Frog VLE application usage. Most teachers have a positive view and are interested in Frog VLE-based learning that able to produce more creative and innovative students. Teachers also aware that the Frog VLE application can help them designing the teaching and learning activities. Siti Salbiah et al., (2010) indicated that teachers have a positive attitude towards the application of Frog VLE but the level of integration of video materials from EduwebTV in teaching and

learning process is low among high school teachers. Respondents agreed that by using the Frog VLE application, it help them diversify their teaching techniques. Respondents also found that Frog VLE could help make the teaching process easier to be conducted. The findings also show that teachers realised that Frog VLE platform has the potential to make classroom teaching more creative with modern and contemporary learning methods. This is in line with the findings of Norashikin and Kamisah (2010) which suggest that Frog VLE application enhances the teaching and learning techniques of teachers in the classroom while minimizing the work of teachers and students.

In the aspect of teachers' skills in using technology applications, this study found that overall teachers' skills are at a moderate level. Teachers' skills in providing interactive learning elements, a more open and flexible learning environment for the teaching and learning process, and using Frog VLE's technology and approach to create collaborative learning (group), are still at a moderate level. Furthermore, only 39.1% of skilled teachers shares learning materials in the Frog VLE application. This problem is due to the fact that the majority of teachers are not good at integrating ICT materials in teaching and learning. This finding is also in line with the study of Noraini, Norazilawati & Wong (2015) who found that 66.5% of teachers have lower ICT skill to use technology tools such as computers and the internet during teaching and learning activities. This statement was also supported by Williams et al., (2000), Cuban et al., (2001), and Ashinida et al., (2004) who stated that the majority of school teachers are still less skilled in applying ICT-based materials and technological innovation in teaching. Teachers' weaknesses in this regard are due to several factors that hinder them from using the newly introduced modern learning platform in the teaching and learning process. Therefore, to increase the level of Frog VLE application usage, it is important for teachers to enhance their technology skills either by attending courses conducted by the school administration or by their own initiative. This is because, with the increased skills and knowledge in applying ICT, it can improve teachers' readiness to use Frog VLE in their teaching and learning activities.

#### *Teacher self-efficacy towards Frog VLE Usage*

This study showed that teachers' self-efficacy in using Frog VLE is at a high level. However, the level of Frog VLE usage among teachers is at a moderate level. The teacher's self-efficacy is high because they believe that implementing the learning process using Frog VLE is a good method and also believes that Frog VLE can create an attractive learning environment. This clearly demonstrates that when teachers' self-efficacy levels are high, teachers' confidence and motivation can increase the level of Frog VLE usage in teaching and learning process. This is supported by the study of Chang et al., (2011) who found that teacher self-efficacy showed a positive relationship with technology adoption that influenced teachers whether to use technology or not in their teaching. Therefore, teacher self-efficacy is an important factor as it can influence teachers to use the Frog VLE application. This finding is also supported by the studies of Noraini et al., (2010) and Mohd Arif et al., (2011) who found that if teacher self-efficacy was high, teachers are more likely to integrate ICT in their teaching than teachers with low self-efficacy. Therefore, teachers with high levels of self-efficacy will survive despite various obstacles faced when using Frog VLE.

This view was also supported by Wong et al., (2013), who acknowledges that teachers who involved in the use of "Smart Board" technology viewed such applications as providing benefits and valuable to students and themselves. Therefore, researchers suggest that policy makers should promote the advantages of using technology and organize training sessions on how to effectively use Frog VLE applications. This is asserted by Albion (1999) who suggested that one of the most effective ways to increase teachers' self-efficacy in the use of ICT, is by those responsible party for providing teachers' ICT skills training. This statement is supported by Moersch (2001), stating that a teacher's confidence in using and operating ICT equipment is a key element to use ICT (Frog VLE) in teaching. Supporting Moersch's opinion is Jones (2002) who argues that when a teacher uses ICT for teaching and learning purposes, teacher self-efficacy and self-confidence will indirectly effected. Thus, it appears to be an important factor for a teacher to teach using ICT in the classroom.

On the contrary, although teachers have high confidence in the benefits and advantages of Frog VLE innovation, the study found that the use of Frog VLE among teachers is still at a moderate level. This is due to a moderate ability in handling ICT during the teaching and learning process. In other words, although the motivation or confidence of teachers to use Frog VLE is high, if their ICT skills are at low

or moderate level, then it will make teachers less confident in using Frog VLE application in their teaching and learning activities. In Albion's (2001) study, respondents stated that the level of teacher self-efficacy in using the Frog VLE application in teaching and learning was measured by the teacher's ICT and technology skill. This shows that teachers' ICT skills and teacher self-efficacy are interrelated and that teachers should enhance their ability to handle ICT whether through courses, training or other teacher assistance so that they will always be confident of applying Frog VLE innovation in their teaching and learning activities.

The result of teachers' self-efficacy in terms of understanding students' learning styles helps them plan the learning process using Frog VLE shows a moderate level. This clearly shows that teachers feel that by using Frog VLE, they will spend more time to complete the prescribed syllabus are unable to reduce their burden. Teachers also have a moderate confidence to produce meaningful learning when using Frog VLE. This finding shows that teachers are less confident about the advantages of this Frog VLE application and they feel sceptical of the effectiveness of applying this Frog VLE in teaching and learning activities. The findings of the Noraini, Norazilawati and Wong (2015) study also indicate that the acceptance of innovation will be stopped by an individual because of the concept of innovation they do not fully understand.

As such, the involvement of teachers in the use of Frog VLE will prove successful if they have high levels of self-confidence including the aspects of ICT skills and knowledge. Low confidence in the ability to use the Frog VLE application leads teachers or individual more likely to feel frustrated, thus affecting their expectations and ability to continue using the Frog VLE application. In addition, in terms of teacher self-efficacy, Albion (2001) argues that this factor plays an important role towards the usage of technology by teachers in the classroom. Overall, teacher self-efficacy represents an important factor in determining the use and acceptance of ICT in teaching.

### Conclusion

Factors of self-efficacy and ability in ICT handling were found to affect Frog VLE usage. When teachers' self-efficacy increases, teachers have higher level of confidence, feel more motivated and interested in using the Frog VLE in their teaching and learning activities. In this study, teachers' self-efficacy is at high level because they believed that implementing the learning process using the Frog VLE is a good method and it could create an attractive learning environment. Although the level of Frog VLE usage among teachers is moderate, all teachers have a positive and keen interest in Frog VLE-based learning that can produce more creative and innovative students. This means that teachers are confident that the Frog VLE application platform can attract students because through this application, students are able to communicate effectively with their peers and teachers whether during learning session or beyond classroom period. Indirectly the usage of Frog VLE application can diversify teacher teaching methods where students can learn collaboratively.

Thus, teachers need to be given early exposure to the Frog VLE application so that they are highly motivated and willing to adopt technology innovations. This indirectly led to effective and efficient usage of Frog VLE. E-learning will be successful if the teacher has the appropriate technological knowledge, training and time to practice with the application. In order to increase the level of Frog VLE application usage, teachers need to improve their skills in technology either by attending courses conducted by the school administration or by their own initiative. This is because, having the skills and knowledge in applying ICT can enhance teachers' readiness to use Frog VLE in their teaching and learning activities. The training must not cease after implementation, but it must continue throughout the whole application of Frog VLE among teachers so that they will always have in-depth information and knowledge on this innovation.

In line with this, schools administrators must complement the school's ICT infrastructure to enable optimal use of Frog VLE and enhance teachers' desire to use the platform. In addition, teachers need sufficient references and guidance from specific groups of administrators, ministries or school colleagues to encourage them using the Frog VLE during teaching and learning. Technology support has a significant impact on educators' use of technology as it enhances technology adoption and acceptance. Teachers also need technical support that can serve as a guide or reference in using Frog VLE innovations because with such assistance teachers will be able to develop their knowledge and

skills to integrate technology applications into teaching and learning activities. In addition, by acknowledging the problems faced by teachers in using the Frog VLE application, MOE and school administrators should take few actions. They should provide sufficient computer facilities to enable each student to access the Frog VLE in labs. LCDs and other technology tools should be maintained by the technicians for avoiding any problems when teachers want to use them. The internet access also should be broadened and increased speed to access the internet.

Furthermore, the MOE and school administrators should coordinate the use of Frog VLE in teaching and learning session by adopting a conventional and technology-based teaching method. As such, everyone involved with the Frog VLE innovation platform should play a vital role such as providing adequate facilities, providing training to teachers, and school administrators should provide good support so that teachers will be more committed in using Frog VLE as part of the teaching and learning process.

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### **Biodata**

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