Digital Learning Effect toward Student Performance and Learning Motivation in Malay Language Subject

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ABSTRACT

Education in Malaysia today is implementing Education 4.0 to cater for students' innovation skills. In order to achieve this goal, digital learning assist in delivering knowledge interactively and collaborative. Teachers play an important role to create student-centred learning through the Virtual Learning Environment (VLE) that enable to attract students interest to learn. The positive impact on students' achievement and learning motivation after learning session through the VLE page. This study aim to identify the effect of using VLE page named as *Celik Akal* (CEKAL) learning sites on students' performance and learning motivation in Malay Language study at primary school. This study involved 31 Year Five students of National School (SK). The instruments of the study were pre and post tests to measure student performance and questionnaires used to measure learning motivation. Data were analysed using SPSS Software Ver. 22 for pre and post instrument and descriptive analysis for questionnaire instrument. The findings showed that there were significant differences between the students' scores and they were highly motivated learning through that page. Therefore, the implementation of VLE learning especially in Malay Language subject will give a positive impact in improving student performance and their learning motivation.

Introduction

Digital education in Malaysia is a national agenda in improving the quality of education in term of knowledge delivery. It give advantages to the teachers and students for preparing and develeop skills in 21 century learning. The virtual learning has change the learning landscape in Malaysia education system toward modern education era. The 21st century education is challenging system due to impact of the national liberalisation and globalisation and the rapid development of technology and ICT. To sustain the education system, E-learning has been introduced to teachers to enhance knowledge delivery quality and achieve the learning objectives. To achive this goal, Malaysia Ministry of Education has providing and enhancing infrastructures and internet access to every school in Malaysia. This inititive is significant in the seventh shift of the Malaysian Education Blueprint (MOE,2013). E-learning is the learning medium which integrating any form of technology used in order to support the teaching and learning process in the internet-based environment. E-learning developed student learning experiences and a room of improvement for teachers to apply various teaching approaches than using traditional approach (Noemi & Moktar, 2013). E-learning attracted the student attention to learn about the topics learned deeper by learning collectively through exploration activities. The technology enable learning such as computers, electronic devices and mobile phones allows students to be the information explorers. This new environment makes learning activities enjoyful besides developing student softskill.

Computer literacy was introduced focusing on Mathematics, Science and English subjects which became the national agenda in teaching Science and Mathematical Education in English (PPSMI) in 2003. PPSMI was established to

strengthen English proficiency within the society in Malaysia (Mior Khairul, 2011). In order to achieve this agenda, MOE has supplied 47,000 laptops to mathematics and science teachers for their convenience in teaching and learning session. In addition, teachers were given training and teaching courseware (Zanzali, N. A. A., & Mohamad, N., 2010). However, in 2012, PPSMI abolished on several reason which one of the reason was the equipment lack of usage by teachers in classroom. In another studies showed that learning Mathematics via traditional method is more relevant where students learn and guided by teachers. This suggests that traditional method is more helpful for student. The lack of teacher's ICT competency caused students disinterested in their learning which may affects student performance and motivation.

To expose Malaysian student to digital citizenship, MOE introduced a virtual learning environment (VLE) to every schools across Malaysia. There are two VLE use in Malaysia education environment, Frog VLE was introduce in 2012 till mid of 2018 and recently using Google Classroom which introduced in mid 2018. VLE is a learning platform to explore knowledge through the Learning Management System (LMS) and develop a permanent change in the students from the mental, thought, concept, attitude and treatment through the online system (Badrul Hisham, Ahmad Rizal & Kamarul Azman, 2013). VLE is a computer-based learning environment that allows interaction among participants as well as allowing students to access information with ease. It is a platform designed to facilitate teaching and learning activities across the Internet as well as helping teachers to manage various educational courses through the web for their students (Jain, 2015). It is a web-based system that resembles the real world of education through integrating conventional education and virtual learning (Junus, 2013). Using VLE in the classroom allows teachers to self-designed materials or shared teaching materials to ensure that teaching objectives are achieved. Teachers managed teaching process virtually and allowed students to access widespread information based on the activities. In addition, the integration various technology and existing widgets can assist students to explore subjects especially in the Malay language subject.

There are constraints to implement e-learning in teaching language study. Normally, teacher provided with traditional teaching materials such as textbook, notes and exercise book. However, due to the lack of guidelines in implementing e-learning may effect teacher's teaching design which it is the main issue to consider before developing teaching material. Teaching design is the systematic development of multimedia based on curricular theories to ensure the quality of teaching via the appropriate materials to fullfill student need. It involved the development of instructional materials, experiments, assessment and student activities that need to meet the pedagogical aspect, learning theory, teaching design as well as the model and technology media used. According to Radin Sili (2012), the integration of information technology based on learning styles and comfort level can help teachers to plan activities in the classroom to be more effective. The diversity of teaching through the internet, multimedia materials and existing teaching materials can improve the quality of teaching among teachers. Therefore, teachers need plan the appropriate teaching design to achive learning objective before managing learning activities and integrating the technology in teaching and learning process.

One of the factor that need to be considered by teachers is motivation factor. Motivation is the key factor for improving student learning. Individuals who are highly motivated will have the desire to learn something, feel good and try to learn it (Gardner, 1985). There are behaviour modification to highly motivated student which affects the way they learn and respond especially to language teaching. According to Gardner (1972), there are two types of motivation in language learning, integrative motivation refers to learning a second language for the purpose of interaction, approaching or understanding the community and instrumental motivation is an individual's desire to gain social recognition or economic benefits. The importance of mastering the language subject especially Malay Language is important to gain benefits in the community, especially Malay community. This is supported by Jerie and Zamri (2011) stated the Iban students are highly motivated in Malay language study in respond of instrumental motivation stimuli.

However, most students difficult to get motivated during teaching and learning process. To enhance learning motivation, teacher need to prepare the new learning environment for student (Tohidi, 2011). Using multimedia technology frequently in language study showed the positive impact on learning motivation as it develop excitement in language class (Genc&Aydin,2010; Kopinska,2013). Besides that, highly intrinsic motivation among student may effect their performance. Intrinsic motivation is process stimuli by interest or desire without involving external pressure (Tohidi & Jabbari, 2012). This is supported by Nisa (2011) who found a positive correlation between intrinsic motivation and the achievement of Form 5 students, which proved that highly motivated students would increase in their academic performance. Therefore, it is important for teachers to plan teaching activities based on

various pedagogical approach and student need to ensure they highly motivation in learning Malay language study through VLE as a new environment.

Research Objectives

The specific objectives of this study are to:
1. The effect of student performance through the use of CEKAL learning sites in Malay language study.
2. The effect of learning motivation through the use of CEKAL learning sites in Malay language study.

Research Hypothesis

HO_1 : There is no significant difference between scores before and after using the CEKAL learning sites.
$H1_1$: There is a significant difference between scores before and after using the CEKAL learning sites.

$HO2$: There is no significant effect on learning motivation after using CEKAL learning sites
$H12$: There is a significant effect on learning motivation after using CEKAL learning sites.

Literature Review

Education 4.0

Education 4.0 is an educational paradigm that emphasises students innovation towards the needs of the current society. It refers to behaviour manipulation with special features which is parallel, cognitivism and visual (Goldie, 2016). According to Harkin (2008) stated Education 1.0 as agrarian, Education 2.0 as industry, Education 3.0 as globalisation and Education 4.0 as innovation. Education 1.0 seen as a requirement for agriculture to social. Knowledge transfered from teacher to students using conceptual and learning comprehensively. Education 2.0 focus on industrial need for social. Teaching concepts in this phases focussing on learn to learn rather than learn to be creative.

Education 3.0 is seen as a social technology requirement. It creates knowledge through self-directed learning by the use of learning technology in the form of teaching materials, digital media and social media that focus on interactive learning. Education 4.0 acts to meet social needs in the era of innovation. Teachers needs to plan and scaffold student skill development to apply new technologies to full fill social needs. According to Sinlarat (2016), the learning management in the present era should allows students to develop knowledge and soft skills rather focusing on reading and writing skills.

Virtual Learning Environment

There are several theories to support the implementation of teaching using VLE . Systems approach, communication and behaviour theory as the alternative learning theory in order to support the use of technology in teaching. However, there are several theories implied in teaching and learning proses through VLE which is constructivism theory, cognitivism theory and minimalist theory.

Constructivism theory is the learning principle founded by philosophers including John Dewey, Lev Vygotsky, and Howard Gardner. This theory is based on research and experience which point out that this learning process involve the mental construction activity through the process of combining existing information with new information. Constructivism philosophers believe that meaningful learning is resulted from the desire to learn, active, consciousness and provides constructive training. It developed a form of understanding through situation and activities implemented (Chi, Feltovich & Glazer, 1981). Therefore, teachers need to ensure that learning process implemented in contextual situations, reflective and collaborate to solve the problem.

The cognitivism theory relates to mental process by observation, knowledge and understanding. This theory is led by psychologists such as Kohler, Ausuble and Gagne. Cognitive philoshopers believe that the learning process is an internal process that takes place in the mind where the new information is received and matched with existing information, modified and organised to produce new information. The result from cognitive study discovered that learning takes place when students have enough and experience to relate the new knowledge. Students will explore the information and develop their own perspective and knowledge.

Minimalist theory refers to the efficiency of information and knowledge delivery. The theory introduced by J.M Carroll (1990) is a framework for teaching design especially for computer-based materials, data processing applications and programming. This theory emphasises the importance of students in seeking experience throughout the learning process. The learning material should be meaningful and at the end of the course, the students are given a realistic project as their final project. The instruction based on personalize-based learning and improved by various activities. Therefore, there a space for student to identify their mistakes and make corrections.

Learning Motivation

Motivation is the main factor required by the teachers to improve student learning. Motivation interpreted as a desire for human achieve performance at high stages and able to overcome obstacles (Tohidi, 2011). Motivation is also an internal encouragement and behavioral guidance based on physiological factors, attitudes and ideals to achieve something. It will affect student achievement and behavior to learn deep. The reason for examination deception among student was due to the lack of motivation that effect their academic performance (Awanbor, 2005). There was a strong correlation between highly student motivation and student academic (Nisa, 2011).

To sustain students' motivation, teachers need to identify the motivation factors to ensure that knowledge deliver optimally. There are five key factor in improving students' motivation which are students, teachers, teaching content, methods or processes and environment (Williams& Williams, 2011). By creating new learning environment, it will motivate students to learn more deeply. Changing the environment from traditional learning to online learning through Arabic games online enhance students' motivation and achievement (Shahrir & Alias,2012). However, there is finding show that ICT in learning did not show positive impact on student motivation (Saharudin et. al., 2017). Therefore, online learning as an alternative intervention to change learning environment which may improve student learning motivation and student performance in Malay language study especially among primary school student.

Methods

This study used quasi-experimental research design conducted in a primary school in Pasir Gudang district. There 31 respondents among the Year 5 students who learn Malay language. Another characteristic of respondent is they have basic the skills to use computers and access the VLE. The number of samples used in this study was adequate according to the sampling method by Kreijic and Morgan (1970). These respondents learn the Malay language study using the CEKAL learning sites.

The instruments of this study are pre and post test and the questionnaire. The pre and post tests questions based on the unit specification table (JSU) provided by the Johor Education Department (JPNJ) for Year 5 Malay Language study. This instrument consists three type of question based on advertisement, articles and infomatic tables. Next instrument is the questionnaire, which consist 10 question about learning motivation aspects. Each question was provided with Dichotomous scale which representing 'Yes' and 'No'. The questions based on the previous research, however the question statement was simplified to fullfill student understanding.

Data Analysis

The findings was based on pre and post test and questionnaire after distributed to the respondents. The data collected and analyse in SPSS application for the t test. As the result, the data analysis to answer these research questions.

Is there any significant score difference between the previous score and after using the CEKAL learning sites?

This test was analysed to review the changes in student score before and after the use of this page in Malay language study. For that purpose, a paired T test was used. Test results are shown in Tables 1 and Table 2.

Table 1. Pre-Test and Post Test Analyses

Type of test	Min	Standard deviation
Pre Test	48.00	9.46
Post Test	62.52	14.96

Table 2. Comparison between Pre-Test and Post-Test

Pair	Min	SD	t	df	Sig. (2-tailed)
Pre Test – Post Test	- 14.52	9.90	-8.16	30	.000

The results showed a significant difference between the students' score before and after the using CEKAL learning sites (t = -8.162, df = 30, p = 0.00). The increase of mean value before (μ = 48.00, SD = 9.46) and mean after (μ = 62.52, SD = 14.96). Based on pre-test and post-test scores, there was an increasement of 14.52. It indicates that there was an increase in scores after the using this page. Hyphotesis null rejected . Thus, there is a significant difference between the score of the students before and after using CEKAL learning sites.

Is there any significant effect in learning motivation after learning using the CEKAL learning sites?

This study was conducted to examine students' motivation after using CEKAL learning sites. The data were collected using a questionnaire which consist 10 items of motivation construct. It is dichotomous scale which 1 representing 'YES' while 0 representing 'NO'. The data analysed using descriptive analysis which focusing on frequency (f) and percentage for each item The results of the analysis are presented in Table 3.

Table 3 Frequency Analysis (f) and Percentage of Motivation Items

Item	Statement	Yes	%	No	%
1	I like to learn Malay language study.	27	87%	4	13%
2	I do not share my knowledge with friends. *	16	52%	15	48%
3	I can solve the problem given by the teacher.	30	97%	1	3%
4	I'm tired learning using the CEKAL Page. *	16	52%	15	48%
5	I can answer the questions asked by the teacher.	29	94%	2	6%
6	I do not like group work. *	16	52%	15	48%
7	I do study on my own	15	48%	16	52%
8	I can learn on my own.	16	52%	15	48%
9	I do not share my knowledge with my	16	52%	15	48%

	friends. *				
10	I can find information using CEKAL Page.	29	94%	2	6%
	Total	210	68%	100	32%
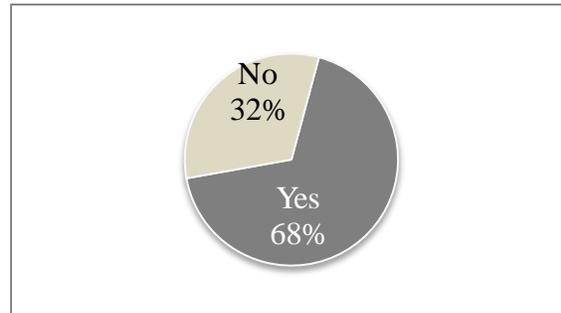
Figure 1 Analysis of Learning Motivation

The result shows an significant effect in learning motivation after using CEKAL learning sites. Based on the table, items 3, 10 and 5 have a higher percentage that exceeded 50% where Item 3 obtained 97%, while Item 10 and Item 5 both obtained 94%. Items 2, 4 and 9 have the lowest percentage of 52%. The number of answered 'Yes' is 210 (68%) while the number of answered 'No' is 104 (32%). Based on Figure 1, 68% agreed that there is an effect on learning motivation after learning through CEKAL learning sites. Therefore, learning using this page may enhance learning motivation among student to learn deep about the Malay language study .

Discussion

VLE is a learning platform provided by MOE to allow teachers conducting learning activities through the integration of technology and learning approach. CEKAL learning sites as a guideline for teachers in developing a learning page that meets the constructivist learning approach. The different learning approach and environment effect student perfoemance and learning motivation. The findings showed that there is a positive impact on student performance in the Malay language study. The implementation of VLE in learning process regularly has reduce the percentage of failure among students (Paulo, Luisa & Carlos, 2017). It supported Scalter (2016) showed that students who rarely use VLE scored lower than those using it regularly. Besides that, the assessment data on VLE used to help teachers in identify student pattern to provide intervention plans for their students (Wolf et al., 2013). Therefore, using VLE enable to improve student performance and assist teachers to identify weaknesses and implement the intervention plan for students.

Learning motivation also plays an important role in ensuring the knowledge deliver optimally. To ensure that the student is highly motivated, teacher need to develop new learning environment in Malay language study. The finding shows that learning through CEKAL learning sites enhance learning motivation in Malay language study. The transition to the new learning environment may enhance learning process to be more interactive which can stimulate learning motivation (Aziah Alias, 2011). The highly motivated students towards their learning show a positive impact on their performance as there is a significant correlation between motivation and student achievement (Nisa, 2011). Therefore learning through the CEKAL learning sites as a new learning environment will improve their performance as there and learning motivation in Malay language student.

Conclusion

Education 4.0 era is the agenda in Malaysia education that needs to be implemented at the early stage especially in primary education. To ensure that this goal is achievable, teachers need acquaint about learning approach and student-centred teaching styles by integrating technology through the use of VLE in learning process. Through this

page, learning process managed by teachers with implementing the 21st Century Learning element by developing learning pages from various sources and technologies. Besides that, implementing constructive learning which allow students exploring information to develop new perspective and ideas. The change of role and open learning environment will enhance student performance and learning motivation toward Malay language study.

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