Use of animation to improve motivation and achievement levels among primary school students

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Teaching and learning on how to acquire skills have been traditionally limited the students' potential due to emphasis on rote learning. Learning by current developments such as the use of animation is one approach that is not only able to attract, but can enhance students' understanding of the events of history. Interesting animation display also allows students to use a variety of skills in the learning process. This quantitative study was conducted to examine the relationship between learning History course through animation techniques to motivation and achievement. The primary objective of the study is to identify the use of animation for learning history among students. Another objective of this study was to identify the levels of student motivation and achievement in History lessons. A total of 46 students were involved (24 boys and 22 girls) who study in Level 2 at a primary school in Zone Debak, Betong, and Sarawak in Malaysia.

Keywords: animation; learning; motivation; student achievement; teaching strategy

The rapid changes and the impact of globalisation have changed the mode of teaching and learning within the Malaysian education system. This change is in line with the characteristics of savvy generation Information and Communication Technology (ICT), since the Malaysian education system is at par with the other countries. Malaysian Education Development Plan (2013–2025) also outlined the ICT as an alternative to improve the quality of teaching as well as a medium to facilitate more accessible teaching method (Boltivets et al., 2018) History is one of the subjects that not only need to be learned but also understood and appreciated by every Malaysian citizen. The importance of this subject in cultivating, nurturing and spreading the spirit of patriotism has made it a compulsory subject for the Malaysian Certificate of Education (SPM, *Sijil Pelajaran Malaysia*) since 2012. Indeed, History subject has also been taught at the primary level since 2014. However, past studies have shown that several factors contribute to poor performance in this subject, such as lack of interests among students (Leng et al., 2013). This situation is further exacerbated when the students themselves have grown up assuming this subject is boring because it requires a lot of reading and it is difficult to acquire good marks. There are also studies which examined the causes of achievement and lack of interest in History subject as a result of less creative teachers (Ahmad et al., 2015) and teacher-centric mode of teaching (Nielsen et al., 2013).

The use of animation as a medium of instruction to change the learning environment to learning that is interactive and fun has been shown to have beneficial effects in the classroom (e.g., Stith, 2004). The excitement of learning, in turn, will increase student motivation and achievement for certain subjects using a range of learning tools (Ackland-Tilbrook & Warland, 2015). Efforts to strengthen the effectiveness of teaching and learning have proven be a necessity nowadays (Relojo, 2011), parallel with the development of education. Using a variety of teaching and learning methods, particularly in the form of animation, teaching and learning environment can be fun and interesting among students. This is because effective learning can be achieved with the involvement of all the senses of human sensitivity through a combination of multimedia elements such as text, audio, video, and graphics (Tews et al., 2015). Therefore, approaches and theories of education should be implemented in the design of animation; either moving or static effectively with the integration of teaching strategies. This is to ensure the delivery of teaching and learning that can increase the quality of knowledge and motivation of students towards learning (Kuha et al., 2018). The use of animation in learning is chosen as it is easier to understand the content of learning what they have read (Underwood & Pearson, 2004) especially for History. Learning by using computer animation can provide an opportunity for students to learn in a dynamic and interactive fun learning. Hence, the use of multimedia for learning to use animation is one of the most important factors to make learning become more interesting.

Various studies on the use of information and communication technologies were done both inside and outside of Malaysia. These include studies on the use of animation (Mayer, 2002), the flipped classroom model (Persky, 2015) and visual multimedia (Angeli & Tsaggari, 2016; Uluyol & Şahin, 2016; Umar & Yusoff, 2014; Yunus & Suliman, 2014) and its impact on teaching and facilitation. These studies have demonstrated that ICT can enhance student achievement. ICT is an alternative to conventional teaching methods and is a two-way learning process. In addition, the previous studies also showed the implementation of ICT is mostly done for Science (Klieger et al., 2010), English (Yunus & Suliman, 2014), and Islamic Education (Nawi et al., 2014). By and large, there is a scarcity of studies on the use of ICT for History lessons. Thus, studies on the relationship between the animation in History subject with students' motivation and achievement should be carried out given the importance of mastering the subjects of History, especially in primary schools. The results of this study can benefit teachers to plan and organise a strategy to diversify teaching methods and facilitation for History subject. Therefore, this study aimed to see the relevance of learning History through animation techniques for motivation and achievement.

The objectives of this study are to see the relevance of learning history through animation techniques for motivation and achievement. In particular the objectives of this study are two-fold: (a) identify the use of animation for learning history among students; and (b) identify the level of motivation and achievement in the subjects of History.

Animation in the History subject

Previous studies show positive impact of using animation in teaching and facilitation of various subjects and at various ages. The application of animation in education is an important point that changed the way of learning and at the same time have the effect of increasing understanding and motivation. The use of animation in teaching and facilitating innovation in learning styles of teachers who take advantage of both teachers and students (Hawk & Shah, 2007). Changes to how to deliver subject content are important to increase the understanding of students and quality of education. In addition, the use of animation can also present content clearly even complex learning through different methods and relevant to current changes. Teachers must be flexible in diversifying interaction between students with different teaching methods and facilitation to ensure that learning takes place.

Similarly, studies on the use of animation have been shown to be effective especially in teaching listening skills. As students listen and view the animation in the form of concrete such in storytelling, they will understand the series of events better. Students were excited and curious in strings of storytelling delivered. The high motivation was to increase the interest of students and have shown an increase in the skills of listening, retell and showed an improvement in their performance assessments. Davies (2002) also found the animation to enhance students' understanding. The use of animation can provide a positive impact on students' academic achievement. The use of animation – whereby it includes various elements to make teaching interesting – can deliver significant student engagement. When students understand the topics presented, they will be able to explain the topic in their own words than traditional methods that rely more rote methods. Learning can be maintained through interactive activities (Crawford, 2001). The use of multimedia presentations such as video, music and images to help improve the retention rate of the information submitted in teaching and facilitation. 3D-shaped animations enhance the understanding of students, especially at the primary level. The animation is one approach that is particularly suitable for primary and secondary schools to explain in graphic design and visual content in the form of abstract subjects.

Animation in improving student motivation

Hanifah (2015) found an animated display to increase the interest and curiosity of what will be shown next. This causes students to give full attention to what is seen on the display. Attractive and interactive animations also spark interest in students to repeat what they hear. Through the use of animation as well, more teachers are flexible to teach a subject in accordance with the level of intelligence of students. If the students have not yet reached the learning objectives, the teachers can repeat the animation display which only involves the use of technology (Lazar & Panisoara, 2018). This finding is also in line with Johnson et al., (2000) that demonstrates the use of animation in teaching and learning to work on improving motivation and interest in learning. This can be seen through the response and behaviour of students. The use of animation has facilitated an abstract concept for analysis to small parts move through the display illustrations and simple text for effective delivery. As a result, when tested, there are changes in the level of knowledge among students. In addition, Neumann et al. (2011) observed an increase in terms of interest and academic achievement after the animation used as one approach (Bautista et al., 2018). In his study, combined with animation cooperative learning method, which is not an individualistic learning curve. Visually displayed through this learning method has increased interest among students. Interest will trigger the motivation to finally seen through academic

achievement after the assessment. Interest in the subject of history can be fostered through the use of multimedia, namely audio and composite video, images and movies (Krain, 2010). Existing interest in the students working on their creativity and arouse curiosity to find information or other historical sources, such as photographs and artefacts.

Therefore, motivation is also one of the factors that can predict a student's achievement (Greene et al., 2004). Motivation in this study refers to the interest in the subjects of history and the ability to push themselves to understand and appreciate the story of the nation's history. The effect of this motivation can be seen through the improvement of knowledge of students in examinations.

Animation in improving student achievement

Hamzat et al. (2017) in his study also shows that animation can increase student achievement in practical work. Students were exposed to computer-based learning using animation methods for Biology. Students can learn skills through the exciting animated display. The results also showed no differences in gender outcomes. The use of said animation tools is gender-friendly. The success of learning occurs when students can use the senses in interaction and provide a response to the submission of a teacher.

The use of animation that has short-text, sound, colour illustrations and movement the added value that can help students in understanding the verbal presentation by the teacher. Animation has been used in teaching and learning as a different approach to learning sessions are no longer dull (Yunus & Suliman, 2014). In addition, Klieger et al., (2010) noted that laptops can contribute significantly to teachers' professional and personal development and to a shift from teacher-centred to student-centred teaching. One-to-One laptops also changed the schools' digital culture. The findings are important for designing concepts and models for professional development when introducing technological innovation into the educational system. The use of various methods of learning is likely to attract students to study History. The use of information technology at the moment is easy for students to access information quickly. The use of multimedia will provide opportunities for students active in learning history (Krain, 2010). Trend education at this time is to use multimedia materials. The use of multimedia is not to replace the direct role of the teacher as a teacher but as a facilitator in teaching and learning (Zachary, 2002). The use of multimedia would avoid only teacher-centred learning.

METHODOLOGY

Krecjie & Morgan's (1970) table was used to obtain a representative sample with 95% confidence level and 5% error. Minimum sample must be taken by 40. This study involved participants, which in line with Krecjie & Morgan. This study used a questionnaire using a sample of 46 Level 2 primary school students as participants. The instrument is divided into four sections. Part 1 is the participant's demographic; Part 2 is the use of animation in teaching and learning; Part 3 is the students' motivation to use animation in teaching and learning history; and Part 4 is the achievement of students in the History subject. The questionnaire in the form of a five-point Likert's scale has been used to collect data from respondents. Data were analysed using descriptive analysis of the mean and the standard deviation. The descriptive analysis based on frequency, percentage, mean and standard deviation were used to analyse the use of animation in the level of motivation and student achievement tests. Participants were 46 pupils (100.0%) of 24 were males (52.2%) and 22 were females (47.8%). Participants' age are as follows: 10 years old ($n = 19$); 11 years old ($n = 16$); and 12 years old ($n = 11$).

FINDINGS

Levels of use of animations in teaching and learning were analysed using descriptive statistics. The analysis results are shown in Table 4.1. Based on the results obtained, it was found that respondents have the highest use of animation to the statement that: 'I studied the History of comic-shaped aids use two hours a week.' (M = 4.74, SD = 0.444). The statement has the lowest mean score was: 'I learn History through video screenings twice a week.' (M = 4:52, SD = 0.505). However, the mean score is still within the category of high-level perception. This shows that the students in this study showed a high level of use of animation to any statement regarding the use of animation in teaching and learning History subject. Motivating students to use animation in the history learning has also been analysed using descriptive statistics. Based on the results of the analysis are shown in Table 1, showed the statement: 'I am more interested in studying the history subject if taught using the comics than the text length.' (M = 4.72, SD = 0.455) had the highest mean score. Meanwhile, a statement that has the lowest score was "I often do my history revision using videos at home.' (M = 4.22, SD = 0.417).

Table 1

Motivation Students on the Use of Animation in teaching and learning History

Constructs	$\bar{x}$	SD
I understood the events history when shown in the form of comics.	4.65	.482
I can understand the order of events shown through comics History.	4.59	.498
I was more interested in studying the history subject if taught using a comic than a long text.	4.72	.455
I can answer this question better test history after the teacher uses comics to teach history.	4.30	.465
I can retell the events of history according to the order of events after learning to use comics.	4.37	.488
I often use the revision history of comics alone at home.	4.30	.465
I understood the events history when shown in the video.	4.67	.474
I can understand the order of events shown in the video.	4.52	.505
I was more interested in studying the history subject if taught using video.	4.61	.493
I can answer this question better test history after teachers use video displays to teach History.	4.33	.474
I can retell the events of history according to the order of events after watching the video.	4.30	.465
I often do my history revision using videos at home.	4.22	.417

Results reveal that all passed passed the test of History. A total of 30 students have obtained a grade of B (65.2%). This was followed by students who obtained Grade A total of 10 students (21.7%) and Grade C among six students (13.0%). This shows the level of motivation among students who use animation to learn History subject have contributed to good marks, simple and brilliant. None of the participants failed in this subject after using the method of learning in form of animation.

Table 2
Final Exam Score for Year 2019 Subject History

Scores	Frequency	%	Cumulative %
80–100	10	21.7	21.7
65–79	30	65.2	87
50–64	6	13.0	100
Total	46	100	–

DISCUSSION

Findings showed that the level of motivation of students in the use of animation to learn History subject has provided better performance than learning only using textbooks which have been recorded 100.0% pass marks for Level 2. The highest mean score (M = 4.72, SD = 0.455). As can be seen from Table 2, it shows that participants have a very high interest towards the subject of history after using animated form. These results are in line with Davies (2002) also found the animation to enhance students' understanding. The analysis also showed that the level of study regularly using animation for two hours a week is also at a high rate. The findings show that the use of comic twice a week has obtain interpretation high score (M = 4.74, SD = 0.444) as well as the use of animation in the form of video which also obtaining interpretation mean a very high level (M = 4:52, SD = 0.505). The use of animation in History learning contributes to higher motivation for them to be more interested in the subject. These results are also consistent with the Neumann et al. (2011) using animation media as a teaching aid in his research.

IMPLICATION

The results of this study have implications for educators to teach subject like history, especially in the primary school which is the main focus of this study. Even though the research conducted in only one school but it the overview of using animation in History subject had impact to motivate the students and their performance result clearly shows the increase of their interest in the subject. This is because the primary school level will start to form the interest in the subjects of History which will give a huge impact on their acceptance of the concept being taught as this subject is boring to some students as it involves a lot of factual evidences. With the results of this study, the educators can change the method of teaching History subject to other method that is more enjoyable and able to motivate students to have their interest in learning History.

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