



IN MOTION: USING STOP-MOTION AS SUPPLEMENTARY TEACHING MATERIAL FOR SECONDARY SCHOOL LEARNING

Siti Zuraida Maaruf (Ts. Dr.)¹, Nik Nur Nabihan Binti Nik Anuar² & Kaarthiyainy Supramaniam (Assoc. Prof Dr.)³
^{1,2,3}, Senior Lecturer

Faculty of Education, Universiti Teknologi MARA, Selangor, Malaysia
Kolej Universiti Islam Pahang Sultan Ahmad Shah (KUIPSAS), Pahang, Malaysia.

Abstract: Rapid changes in technology, specifically knowledge-based technology, have inspired innovation in the use of tools to deliver instructional teaching and learning materials. Therefore, teachers need to be ready to utilise technologically driven supporting materials that focus on how and what pupils learn in an environment that is engaging. Therefore, this Design and Developmental research investigated the development of a stop-motion video as supporting material for teaching History to 63 Form One secondary school students. Results from phase one showed encouraging and positive feedback from students when two of the History teachers used stop-motion videos as teaching and learning material during their class. The data collected investigated the Need Analysis for History teachers in using stop motion for their classes. A semi-structured interview was employed with four History teachers and their responses were transcribed verbatim.

Keywords: student-centred, stop-motion, History learning material

1.0 Introduction

Innovation in teaching techniques have always been encouraged to make teaching and learning more interesting and to meet students' needs. With constant technological development, teachers are required to not only be creative with their teaching approaches but also to be innovative in managing the use of technology in their teaching approaches. This is in line with Industry Revolution 4.0 and UNESCO's Sustainable Development Goals that encourage the use of digital technology in meeting present needs in various sectors, including education. Therefore, it is important to ensure that classroom supporting materials focus on providing experiential and exploratory learning opportunities for students (Harsono, 2007) to complement more traditional learning tools and approaches that are in place. Siti Zuraida et. al (2019) had asserted that various technology-based methods have been utilised as effective pedagogical supporting materials. For instance, the use of videos remains popular in teaching and learning as it could be repeated and allows teachers to design various activities from the same source to meet various learning objectives (Jewitt, 2012). However, with the advent of technology, other tools that are more advanced like stop-motion could be utilised for teaching History at the secondary level.

Digital video has been successfully utilised during classroom activities to develop students' learning engagement and to enhance their learning experiences (Willmot et. Al, 2012) because it provides a platform for learners to discuss topics and ideas. Moreover, using videos for learning is said to promote the potential of deeper learning towards a subject matter while enhancing students' motivation to learn. This is due to the lively display of content which is useful for explaining the different situations that occur in real life (Mirvan, 2013), akin to syllabus stop-motion, and therefore captures students' undivided attention (Woottipong, 2014). Therefore, this study proposes the use of a video developed using the Stop-motion technique as a learning material in the History classroom. Stop-motion is an animation that uses real-world objects. These are physically manipulated by taking photographs of the objects frame-by-frame and processing them to create an illusion of movements (Judge & Hertzfeldt, 2004; Selby, 2009; Fyfe, 2016). The movements in the animation are done by manipulating a series of static images in a sequence of actions to create the progress of movement. Therefore, in this study, a series of pictures depicting the historical content were used to create a stop-motion video for teaching History.

The Teaching of History

Learning historical facts can be mundane and wearisome to some students if not to the majority of them. Even reading the descriptions of artefacts in a museum can be uninspiring to students let alone reading all the facts in a History textbook. Umi Kalsom (2014) highlighted that teaching the subject has been presumed to be apathetic and sadly, bland. Moreover, Shakila et. al. (2014) criticised that the teaching of History in Malaysian schools lacked 'inclusivity, creativity and relevance'. It was brought up as early as the 70s how students struggled with memorizing historical facts and understanding information from a single textbook as reference which diminishes the interests in learning the subject (Lewy, Wolff & Shavit, 1974). This too was recounted by Shakila et. al (2014) in their literature on public comments of using a single textbook as classroom reference that was found to be culturally biased. In a more recent research, Akengin and Cendek (2017) conceded that although students found learning History as interesting, there was a possibility of weariness especially when the teacher's presentation lacked appeal. Besides that, the use of the textbook as a single text reference in the classroom was uninspiring to many students. Carretero (2018) reiterated that students perceived History, which instilled patriotism or knowledge of how a nation was built, as less important than Sciences, which is deals with contemporary and real-world situations. With these concerns, it is timely to develop new classroom materials such as stop-motion videos to make History lessons more enticing for learners.

Razaq et al. (2010) also stated that there were History teachers who were not professionally trained to teach the subject nor were given the opportunity to attend special courses to enhance their teaching techniques. Understandably, many untrained teachers instructed their students to memorize important details for excelling in examinations especially at the higher secondary school level. At the end of the secondary education in government schools, students are required to sit for the Malaysian Certificate of Education examination which is considered as high-stakes and obtaining good results in subjects like History would determine the students' future. As such, teachers have the accountability to ensure that their students perform well in the high-stakes exam (Supramaniam & Nazer, 2016). Therefore, it is necessary to address their needs as this issue may affect how the History syllabus and overall curriculum from the Ministry of Education is delivered. This study suggests that the use of technology such as the stop-motion videos may allow teachers to experiment with the tool to improve their teaching technique repertoire, irrespective of their prior training in the subject. As a move in this direction, the research objective of the study is to identify the needs to develop a stop motion video as supporting material in the teaching of History at among Form One secondary school students.

Methodology

This research applied the Design and Development research approach by Richie and Klein (2007) to design and develop a stop-motion video as a supporting material for teaching History at the secondary school level. Therefore, three phases of specific procedures were adopted in line with the ASSURE Model which are Phase 1: Need Analysis, Phase 2: Design and Development and Phase 3: Implementation and Evaluation. However, this paper focuses on Phase 1 which is the need analysis of History teachers.

Research Instrument: Semi-Structured Interview

Phase 1 in the present research involved needs analysis in which data was obtained through semi-structured interviews with four History expert teachers. The objective was to investigate the participants' understanding, perspectives and feelings on the need to develop a stop-motion video as classroom teaching material. The researchers took into consideration Creswell's (2013) suggestion that semi-structured interview could yield in-depth information from the interviewees. Although the researchers had several planned questions, they were able to modify certain phrases and sentences based on the targeted needs (Kielmann et al., 2012). The data collected was then transcribed verbatim.

5.2 Sampling

The sampling for Phase 1: Need Analysis involved four History expert teachers for secondary school. They were purposively selected because they have more than five years of teaching the subject and represented the target population as suggested by Fraenkel et al. (2012).

6.0 Findings of Semi-Structured Interview

6.1 The use of supporting teaching material.

All the participants agreed that they used supporting teaching materials in their classes, but these are usually limited to conventional items like using poster papers (*mah-jong* paper) and colouring items for activities. However, the respondents had reiterated that this was not frequently carried out due to time constraints. Sometimes there were unexpected delays due to events in school and this prevented them from achieving the teaching objectives as stated in the school syllabus.

Participant A stated:

Ok, I have used supporting teaching materials but, not for all topic, I used it depends on suitable topic, then I will use either video or sometimes, computer sometimes by phone....

Participant B stated:

I have; but not for all session that we use ... only sometimes

Participant D stated that:

time ... furthermore, nowadays it is compulsory to pass the history subject, and we teach the upper form right, it is compulsory to pass the history subject and then within a week. We only have three times of teaching session which equal to more or less one hundred and twenty minutes only per week so if we use BBM it is going to slow down, because we want to finish up syllabus, but there is the use of it but the simple one only like 'mah-jong' paper, crayon, whiteboard marker and all for them to draw....then there is a use of slide show, because ... especially at the end of the year when we want to finish the syllabus, because we can finish faster by the use of PowerPoint slideshow ... we finish, the students will see the slide show and then we give them the hands out, tell them to refer it is easier like that. But, there are lots of limitation when we used BBM that are based on IT ... one is the facility ... then we know

that teachers need to follow the schedule booking rooms ... that limitation ...the materials not so much problems because we can get it from other friends but, the facility and tools, there is one to two only.

As could be seen in the excerpts, Respondent C informed that she had never used any contemporary technology-based supporting material; however, she informed that she provided website links for students to view at home as schoolwork. Respondent C also disclosed that the students' responses were encouraging, and this prompted her to continue the activity. She believed that the non-face-to-face session that involved the use of technology improved students' understanding of the content of History lessons. The other three History teachers' responses seemed to echo her response.

The responses gathered from the teachers has brought to our attention that contemporary technology is essential in teaching and learning but there are limitations to facilities available in schools. However, Shakila et. al (2014) added that teachers may have the necessary tool to incorporate the use of new media in their classrooms but may not do so due to their lack of knowledge and skills in using the various platforms available. By providing students website links only to explore on their own seem ineffective if the materials are not further discussed and related to the target lesson. Teachers' lack of presence or participation in this extended teaching and learning process may not guarantee that their objectives would be achieved especially among students who are not independent learners.

6.2 The knowledge about Stop Motion video.

The interview data showed that three participants were unfamiliar with stop-motion videos but gained some understanding after the researcher gave a demonstration using a short video. The researcher also shared some information about the technology as used in the commercial industry and the basic techniques of stop-motion production. Only one respondent (Participant A) was familiar with the technology and was familiar with its applications in the commercial industry as she had gathered some information from her husband. Respondent A's response was as thus:

I know because my husbands' student, she had done, she learnt, how to say, she did advertise by using stop motion so it's certainly in my knowledge.

On the contrary, Participant B stated:

OK the use, stop motion video as supporting teaching material in History subject is very good because can pull students' attention to be more interested in history subject because most of the time, students do not really like history, so when they see there is a video, there is animation, there is movements, therefore they will become more interested in learning history.

Participant C stated:

Stop motion? I just know about it (laughed) yes ah?

Similarly, Participant D stated:

Stop motion, like Adobe? I never know. I do not know... Maybe I have seen that but I do not know the name. Maxis, the new one? Hotlink? The red Hotlink? I do not notice, I do not know the name. We use to see it right but we do not know the name, I do not know.

It is evident in the responses that the teachers lacked the necessary training in the applications of contemporary media especially the various presentation methods using technology. Shakila et. al. (2014) suggests that teachers need appropriate training to be able to create teaching materials for their classrooms. It is timely that the suggestion is considered if the use of stop motion is to be extended in the teaching and learning of History in schools.

6.3 The needs to use Stop-Motion Video as supporting material for History.

The respondents agreed with the need to use stop-motion video as part of their teaching practices. They unanimously agreed that using the technology in the classroom could kindle students' interests to learn History as generally many found it uninteresting especially when they only had textual references. Respondent B opined that occasional use of new teaching materials would make learning more interesting as students have more than a single textbook prescribed by the ministry. More importantly, Respondent A emphasized that the unique technique used in stop-motion was interesting and had appealing user experience (UX) for the students. It was essential to present students with contemporary technology-based teaching learning materials. Respondent B concurred that through video viewing, teachers could vary their teaching techniques, for instance, asking students to take notes of important facts during the video viewing instead of copying notes from the whiteboard in the classroom.

However, after the demonstration using the stop-motion video sample, the teachers' responses were very positive.

Participant A stated that:

It never crossed my mind but I think certainly can...my friend, he is (university) lecturer, he paid somebody to make stop motion for his lecture. History is something. We feel bored when we listen to past history right, when we use things like stop motion because its moving. It takes time, if there is somebody can be paid, ok can, because it is something new... because when it is moving, it can grab students' interest, it is not boring..

Participant B concurred by saying:

In my opinion about the use of stop motion video as supporting teaching tool, I think it is very good and if can, we can make maybe a session once in a while with the stop motion video to attract students. Basically students love a new change in the teaching technique, not depend on the text book only, writing, copying what is on the whiteboard...

Respondent C added "It is ok, I think it's quite suitable" while Respondent D said, "It is good, can be accepted". Relevant to the responses, Mohamad Johdi and Ahmad Razaai (2010) had cautioned that while it was important to teach History in an interesting way, the methods adopted should not overshadow the content itself. At the end of the lesson, students should be able to understand and relate to the content of the lesson.

6.4 Suitable topic or content for developing Stop-Motion video.

All the four teachers shared their perspectives on the topics that could be included in the stop-motion video as supporting materials for teaching Form One History. However, the three of them suggested that the stop-motion video should be introduced in the first few topics as introduction to the content as the topics were not complicated.

Participant A stated that:

I think all chapters are good to apply stop-motion right but I am afraid that as an early exposure, we try the early chapters. We try first, meaning that if okay maybe can continue with other chapters. Meaning that we start with early chapters. It feels wrong to make stop-motion with the very last chapter.

Participant B shared

I think it is better if we start with the first or second chapter first, because we want to see the results first. Basically, the first chapter and the second is not too complicated. There is not too much explanation that we do the simple one first to see feedback from the students first.

Participant C stated

Suitable topic, actually it is quite good because students can already see the idea right ... This means other than the content that they get from the textbook picture, if there is other picture other than that I think can add more on their knowledge before we explain because most students they know what is stone age, metal age, they can imagine the basic already. But if they can watch it, this means that it will be more interesting, I think that the video is suitable for short syllabus. I think for longer chapter, the Form One chapter, the fall of Malacca, the rise of Malacca is quite long that each of the factors must be explained. That one I do not feel is suitable. If chapter two maybe, I think the suitable one is the short topic.

Participant D stated

...because I don't know, not really clear about what you mean by stop-motion, is it used like flash card or what? No, like a video? If like that there is a lot actually, a lot of topics that I think we can work on, especially the form five which is the road towards independence, Malayan Union, 'Pakatan Murni', chronology, the road towards independence. If like this topic there is a lot of the prehistoric, right? Because if chapter five the Sultanate of Malacca, Parameswara, that one is quite OK.

As evident in the excerpts above, Participant C articulated that the content could then be gradually developed for other topics that are more detailed. This is because teachers can gather students' feedbacks on their opinions of using stop motion videos for their learning as pointed out by Participant B to which was resonated by Participant A that teachers could make necessary adjustments upon getting students' feedbacks at the introductory level. However, Participant D was unsure how the stop-motion video viewing could be executed as she was still unclear of the contents to be included. This may be due to the heavy syllabus content that had to be completed within the school year and sudden changes in the school calendar that affected teaching plans.

6.5 Appropriate elements to be concluded while developing Stop Motion video as supporting teaching material.

It was unanimously agreed by the four Participants that the visual effects in the stop-motion video could appeal to students, providing them with the elements essential in user experience (UX) (Hekkert, 2006). The UX elements should be taken into consideration as students will need to not only understand the content but develop meaningful experience for learning and information retention of the content.

Participant A shared,

The elements, maybe colour.. students like bright colours, so that can grab their interest too. Colours should be bright, maybe orange, or yellow, or red, the bright one right, then for, typography, not to look serious, big, simple but informative. Then the image, put some cartoon, or doodles which can grab students' interest. No cartoons basically students would not be interested, boring. If there is cartoon doodle it will be better so they will enjoy.

Similarly, Participant B stated:

In my opinion, if for standard school or high school, basically, students love, pictures, audio visual, what interesting typography which what people call not a static font, which has movements that use background colours that is attractive to make them interested...and also stop-motion if has, button or link or it must be easy for students to use it, OK, for, if image, I think they like more cartoons characters that are close to them, that they see every day, for example, superhero characters that they like or, implemented in (teaching aids) for History subject that is appropriate. If have simple characters also can but must have connection to what they see in their daily lives, simple drawings that is easy to attract them.

Participant C agrees as thus:

Yes ... maybe pictures or the images that will be used should have variety even though it is like, the example of picture, the vase right? The more pictures the more interesting.

Participant D stated that:

One, music, student loves music, right, how to say, the way the sharpness of the beginning, (making sounds) like that, music has to be good, the explanation from the voiceover must be like when watching the available videos, the voice of the people who read is like (make slow sound while laughing) so slow. The graphics should be good too, the colour, but students love music, because students nowadays if we ask them to write they said teacher I rather write in the hand phone ... typing in the hand phone rather than hand writing, so they actually hate typography. Students nowadays, they do not like to see a lot of things, textbooks nowadays...but if we are marking, the facts hundred percent comes from the text books, but that is the reality. Students nowadays hate reading...We has to give them short notes, they will read that way.

The excerpts above reflect that the respondents were very particular with how the stop-motion presentation was going to be presented to the teenagers as they wanted materials that were age-appropriate rather than something "childish" (Participant A). Participant D highlighted that the video effects should be given some careful consideration by ensuring that the sound effects and voiceover were clear and effective. This is a critical aspect in human-technology interaction as students can assimilate their prior knowledge with that of the present and the future. Respondent D also proposed that stop-motion videos be used as alternatives to textbooks as the videos make the lessons more interesting. Students do not have to only read their History books for facts as it can be a mundane activity.

6.0 Conclusion

Data obtained from the semi-structured interviews have garnered useful insights to the teachers' experience and possibilities of incorporating stop motion for teaching History at the secondary level. Among their concerns were the availability of equipment to view the videos in the classroom, insufficient time and change in schedule that may affect their lesson plans. However, they were positive and provided constructive feedbacks towards making History lessons more interesting to their students. One of the feedbacks was on the content of the stop motion video that be appealing for the students. It should not have too much cartoon or "childish presentations" as the target audience are students who are already in their early teens. In fact, the teachers emphasized that the user experience must be age-appropriate especially in the choice of colours, audio and images. These need to be thoroughly planned so that the students remained focused on the content of the lessons.

As mentioned at the beginning of this paper, the focus of the research is the data obtained in the Needs Analysis phase. As such, the findings would be used to further develop and produce a stop motion video that is aligned with the needs of the Form One History syllabus. A prior research by Pugh (2013) on the use of stop motion as an innovative approach to engage students supports the current findings that it could promote creative collaboration and positive attitude among students. As Pugh had found, this study too affirms that teachers would benefit from using such technology in the classroom besides prompting them to be creative. This underlines the importance of provided carefully planned instructions to train teachers who are keen in adopting technology in their classroom as it cannot be assumed that they would be able to adapt tools that are widely available or are less sophisticated. This is because integrating technology as part of content subject requires skills that involve intertwining pedagogical knowledge and technological knowledge within the requirements of the syllabus. As Shakila et. al. (2014) proposed, workshops would be most apt, but it could be part of continuous professional development programs for teachers.

REFERENCES

- [1] Abdul Razaq, A., Ahamad, R., Ahmad Ali, S., & Mohd. Jodi, S. (2010). Malaysian Secondary School Curriculum and Its History Contribution towards Racial Integration. *Procedia Social and Behavioral Sciences* 7 (C), 488-493. doi:10.1016/j.sbspro.2010.10.066
- [2] Akengin, H. & Cendek, M. (2017). A Study of Students' Opinions About History Subjects in the Social Studies Curriculum. *Journal of Literature and Art Studies* 7 (10), 1347-1353. 10.17265/2159-5836/2017.10.016
- [3] Aykac, V. (2015). An application regarding the availability of mind maps in visual art education based on active learning method. *Procedia – Social and Behavioral Sciences*, 174, 1859-1866. <https://doi.org/10.1016/j.sbspro.2015.01.848>
- [4] Bharambe, M. I. (2012). Effectiveness of Mind Mapping in Educational Psychology. *Journal of Biological Chemistry*, 2, 10-18
- [5] Cakó, F. 2014. Sand Animation by Ferenc Cakó. <http://sandanimation.tumblr.com/>
- [6] Carretero, M. (2018). Imagining the Nation throughout School History Master Narratives. In Demantowsky M. (Ed.), *Public History and School: International Perspectives* (97-108). Berlin/Boston: De Gruyter. Retrieved from www.jstor.org/stable/j.ctvbkk2pq.9
- [7] Creswell, J.W. (2013). *Inquiry & Research Design*. Sage Publication: Thousand Oaks.
- [8] Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education*. McGraw-Hill: New York
- [9] Harsono, Y. M. (2007) Developing learning materials for Specific Purposes. *TEFLIN Journal* 18 (2), 305-354.
- [10] Hekkert, P. (2006). Design esthetics: principles of pleasure in design. *Psychology Science*, 48 (2), 157-72.
- [11] Jewitt, C. (2012) *An Introduction to using video for research*. NCRM Working Paper. National Centre for Research Methods: Southampton, UK.
- [12] Judge, M., & Hertzfeldt, D. (Producers) (2004a). Mike Judge and Don Hertzfeldt present: The Animation Show (Vol.1). Retrieved from www.mtv.com/shows/the_animation_show/series.jhtml
- [13] Judge, M., & Hertzfeldt, D. (Producers). (2004b). Mike Judge and Don Hertzfeldt present: The Animation Show (Vol. 2). Retrieved from www.mtv.com/shows/the_animation_show/series.jhtml
- [14] Kielmann, K., Cataldo, F. and Seeley, J. (2012). *Introduction to Qualitative Research Methodology: A Training Manual, produced with the support of the Department for International Development (DfID), UK, under the Evidence for Action Research Programme Consortium on HIV Treatment and Care (2006-2011)*. <http://www.dfid.gov.uk/R4D/Output/188391/Default.aspx>
- [15] Lewy, A., Wolff, J., & Shavit, S. (1974). Students' and teachers' perceptions of studying History. *The History Teacher*, 8(1), 73-80. doi:10.2307/491440

- [16] Mirvan, X. (2013). The advantages of using films to enhance student's reading skills in the EFL classroom. *Journal of Education and Practice*, 4(13), 62-66.
- [17] Mohamad Johdi, S. & Ahmad Razaai, A. (2010). Innovations of History Education in the High Schools, ICSS, Malaysia. *International Journal of History Education*, 11 (2), 73-88.
- [18] Pugh, S., & Pugh, S. (2013). Stop Motion Animation as an innovative approach to engagement and collaboration in the classroom, *The Student Researcher: University of Wales*, Vol. 2, No. 2, May 2013, 109-120
- [19] Richey, R. C., & Klein, J.D. (2007). *Design and Development Research: Methods, Strategies, and Issues*. United States of America: Lawrence Erlbaum Associates, Inc.
- [20] Selby, A. (2013). *Animation*. London: Laurence King Publishing.
- [21] Shakila, Y., Rosilawati, Z. & Ahmad Kamal Arifin, M. R. (2014). History and the new media: Teaching Form Five History in Malaysia: Prospects and challenges. *Proceedings of EDULEARN: Barcelona, Spain*. Retrieved from 0352-0365. <https://pdfs.semanticscholar.org/d848/7f8c149305c1786662c9b82f04390c59e92e.pdf>
- [22] Siti Zuraida Maaruf, Aliza Mohd Salleh & Noor Farhani Othman (2019). [The Development of ARTHIS Interactive Module in Teaching and Learning Art History](https://doi.org/10.24191/smrj.v16i2.7063). *Social and Management Research Journal*, 16 (2). Retrieved from <https://doi.org/10.24191/smrj.v16i2.7063>
- [23] Supramaniam, K., & Nazer, A. (2016). Two rabbits in a hat: Comparison of SPM English language and IGCSE English as second language high-stakes test. In *National Conference of Research on Language Education*.
- [23] Thomas Steven F. (2016) *Materials and movement in Stop Motion Animation*. (Unpublished undergraduate dissertation). Abertay University, United Kingdom
- [24] Umi Kalsom Mohd Salleh (2014) *An investigation into differences between out-of-field and in-field history teachers' influence on students' learning experiences in Malaysian secondary schools*. (PhD Thesis). University of Adelaide, Australia.
- [25] UNESCO. *About the Sustainable Development Goals*. Retrieved from <https://en.unesco.org/sustainabledevelopmentgoals>
- [26] Willmot, P., Bramhall, M., & Radley, K. (2012). Using digital video reporting to inspire and engage students. Retrieved from <http://www.raeng.org.uk>
- [27] Woottipong, K. (2014). Effect of using video materials in the teaching of listening skills for university students. *International Journal of Linguistics*, 6 (4), 200-212. Retrieved from <https://doi.org/10.5296/ijl.v6i4.5870>

