The Effectiveness of Using an Online Presentation Platform in the Teaching and Learning of History

Zulbahrin Haji Ismail¹, Rohani Matzin², Rosmawijah Jawawi², Masitah Shahrill^{2*}, Jainatul Halida Jaidin², Lawrence Mundia², Mar Aswandi Mahadi²

¹Sekolah Menengah Sayyidina Husain, Ministry of Education,
Brunei Darussalam

²Sultan Hassanal Bolkiah Institute of Education, Universiti Brunei
Darussalam, Brunei Darussalam

*Corresponding author: masitah.shahrill@ubd.edu.bn

Abstract

Most research on the aspects of teaching focuses on the technological, pedagogical and content knowledge. However, more studies are yet to be explored on the impact and efficiency of using technology as a tool for learning, particularly in the secondary history education. This study investigated how the online presentation platform called Prezi can be used effectively as a teaching and learning tool for the history subject. To test its effectiveness, students were given pre-test questions on historical topics before they were asked to form groups, create their own Prezi and present their products to the whole class. After the class presentation, they were given the post-test questions. The results indicated that there was an increase in the knowledge gained when the students were actually 'doing' and 'creating' their own Prezi. The findings further indicated that the students were keen to explore new technological platforms whilst studying history, thus appealing to their tech savvy tendencies. Teachers however,

should carefully plan and create Prezi that are visually stimulating and grab the attention of the students in order to convey knowledge to the students.

Keywords: Prezi; Learning tool; Presentation skills; Secondary history education

Introduction

In recent years, recognition on the value of Information Technology (IT) to innovations in the teaching and learning in educational subjects has gained ground. With the advent of the 21st century, teachers are now expected to incorporate IT into the teaching of their subjects. The same is also true with the Brunei National Education System reforms of the 21st century, whereby teachers are now expected to incorporate IT into the teaching of their respective subjects (Ministry of Education, 2013). One innovative way to present and convey information to students is the use of the online presentation software tool called Prezi (www.prezi.com).

What is Prezi?

According to Perron and Stearns (2010) "Prezi is an online presentation service provider that offers different types of accounts and options for creating and storing digital presentations" (p. 376). And based on the information publicly available in prezi.com, it is a cloud-based presentation software and storytelling tool for exploring and sharing ideas on a virtual canvas. It is distinguished by its Zooming User Interface (ZUI), which enables users to zoom in and out of their presentation media. Prezi allows users to display and navigate through information within a 2.5 dimensional space on the Z-axis.

In comparison to the traditional presentation software, Prezi allows a linear and a free-flowing presentation of a story line using a large blank workspace called the canvas, and a story line is then created by arranging the elements on the canvas (Perron & Stearns, 2010). Consequently, can Prezi be deemed as a viable option to be used as an effective learning tool? Bernhardt and Fischer (2006) contended that when there is audience participation, the knowledge which are conveyed to the listeners increases, and thus the presenter's style becomes more dynamic and engaging. The use of Prezi also provides a different and distinct presentation experience. The advantage is that it allows the presenter more flexibility and creates a way to show relationships among different items in the presentation, and thus providing the audience a better idea of the big picture (White, 2011). However, the use of

Prezi also has some retractors and its critics. Some pointed out to the unfamiliar interface as well as its dizzying zooming capabilities. Adria (2009) wrote that all the animative zooming effects may potentially be distracting for someone who wants to convey messages direct and straight to the point.

Several previous literature have also reported on the use of Prezi from the perspective of teaching, such as Brock and Brodahl (2013), Kiss (2016), Leimbach (2010), Lightle (2011) and White (2011).

The Use of IT in History Lessons

According to Haydn et al. (1997), with IT developing at a surging rate it is important for teachers to expose students at an early age. One reason is that students leaving school in the 21st century will need to be equipped to make use of the technology, and that school history teachers should take account of this and think carefully about how technology can be used in improving the quality of the teaching and learning in history. They further stated that advances in new technology offer the opportunity to deliver the history curriculum, and develop pupils' understanding of the past, in a more vivid, varied, active and engaging way than was possible.

There are two ways that computers can be used to support computer-assisted teaching and learning (Spaeth, 1996). In the 'workshop' approach, students learn to use general-purpose programs to explore and analyse historical data derived from primary sources. This approach may be termed as 'tools-based' or 'source-based'. For this current study, we employed this 'workshop' approach in which students create their own Prezi albeit stopping short of actually analyzing the data, where their material and information are garnered from their history textbooks. The second approach, Spaeth (1996) stated that computers are used as an instructional medium, supplementing or replacing other forms of instruction such as reading, lectures and even seminars. Various materials are available, not only for programmed learning but also simulations, electronic books and hypermedia. The use of Prezi falls under this category

and by providing sources and instructions to students thus breaks down the barriers between these approaches to teaching with computers.

According to Spaeth (1996), the goals and objectives of computer-assisted history teaching can be summarized in three categories. The first is to introduce students to the application of computer-based tools to historical problems such as programming skills, quantitative methods and database management. The second goal is to enhance students' understanding of how historians work by enabling them to explore and form their own interpretations of historical source material. For this current research study, the students explored and made their own Prezi. We anticipated the students may appreciate that history is a dynamic subject based on the interpretation of often conflicting and ambiguous information, and subsequently develop their own interpretations as well. The third and last goal, which coincides with this research study, is to enhance students' understanding a particular historical topic by using Prezi to supplement lessons and lectures.

Lloyd-Jones and Lewis (2000) and Spaeth (1996) argued that in the long run, students were keenly aware that the computer skills they acquired whilst studying history through IT were marketable, both in terms of short-term and for their long-term career prospects. Therefore, transferable skills are an important spin off from the process of teaching history with IT. However, although Prezi is a small component of IT that is available to teachers and students, its exposure may hold them in good stead for the coming future. Barton (1996) found that the most significant influences on the student teacher use of IT were seeing their supervising tutors using IT, and the encouragement and support from the school and university staff. Hence, attitude towards information technology is more important than the level of technical expertise in IT. Teachers, perhaps the younger generation of teachers, are in a position to influence the attitudes of students towards increasing the use of technology in their studies.

There is a lack of research on the learning gains made by the possible use of IT in school history (Haydn et al., 1997). Similarly, most studies on Prezi focuses on higher education (Kiss, 2016). Bender and Bull (2012)

conducted a study on the effect of the use of Prezi on a seventh grade students investigating their attitude towards learning science, engagement in school science, and the impact on learning science. The results showed that Prezi was effective as a learning tool as it engages students in learning and helps them retain the information learnt. Haydn and colleagues (1997) maintained that it is not a question of how much teachers use computers, or the breadth of applications used; what matters most is how effectively teachers are able to use new technology to improve the quality of the lessons. This present study relies heavily on this premise. The quality of the Prezi presentation will have a significant impact in whether students can take in additional historical knowledge or just plainly be detrimental to their absorption of historical facts.

The Study

Within the subject of history, Haydn and Macaskill (1996) revealed that most students are keen to develop their competence in IT, both in terms of personal skills and IT use in the classroom. However, studies or reports by OFSTED (1994), Department for Education (1995), Haydn and Macaskill (1996) and Haydn et al. (1997) also revealed that a majority of history teachers do not care to use or routinely use computers in their classrooms. Furthermore, there is a lack of research on the learning gains made by the possible of using IT in school history (Haydn et al., 1997). Against this background, this study aimed to investigate the effectiveness of using Prezi in the secondary history lessons. The questions driving this study are, firstly, does the use of Prezi (as a medium) improve the student's ability to retain historical information? Secondly, are the students able to create historical presentations with the use of Prezi? And thirdly, what are the views of the students and the teachers in using Prezi as a teaching and learning medium?

Methodology

An action research approach was used to investigate the effectiveness of using Prezi in the secondary history lessons. Based on the action research model by Kemmis and McTaggart (1990), they postulated

that the cycle goes through four major phases: planning, acting, observing and reflecting. The cycle used in this study, shown in Figure 1, was adapted from Elliot's (1991) model of action research.

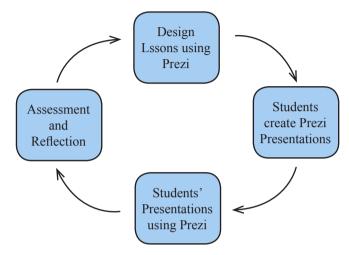


Figure 1 Action research cycle (adapted from Elliot, 1991)

<u>Design Lessons using Prezi</u>: The teachers planned the lessons using Prezi, which included: the teacher's presentation of Prezi on a historical topic, design classroom activities using Prezi, and preparing the pre-tests and post-tests questions to assess the effectiveness of the lessons using Prezi.

<u>Students Create Prezi Presentations</u>: The students were divided into small groups and given instructions on how to make their own Prezi. They were given two hours in the computer laboratory to design their Prezi presentations.

<u>Students' Presentations using Prezi</u>: The students presented their Prezi presentation to their peers.

Assessment and Reflection: The students completed the assessment questions, questionnaires, and attended the interviews sessions to assess the effectiveness of the lessons using Prezi. The results from these data sources were analyzed, evaluated and used for planning for the next Prezi lesson

Data collection

A pre-test question, based on the past General Certificate of Education Ordinary O Level examination questions, on the topic of 'British North Borneo Company' was administered to the students before the start of a lesson. The students were then put into small groups and were given instructions on how to log on to Prezi's website and went through the tutorial in how to make their own Prezi. Subsequently the students made their own Prezi within the two lessons in the school's ICT classroom. The students were required to give a 5-minute presentation to the class. They were peer assessed and marks were given according to their presentation skills, visual graphics, knowledge and flow of information. The students were also given a post-test to see if there were any gains in their historical knowledge. A survey was given to the students to gather information on their views of the lessons using Prezi. The four teachers were also interviewed about their views on Prezi.

Participants

The participating students of this study consisted of twenty-one Year 9 history students from one of the government secondary schools in Brunei Darussalam. There were thirteen male and eight female students, with age ranging between 11-14 year olds. In addition, the four history teachers in the school also participated in this study. The permission to conduct the study was sought and granted beforehand. Furthermore, the study was conducted under the supposition that the participants remained anonymous.

Results and Discussions

Students' ability to retain historical information

As shown in Table 1, sixteen out of nineteen students showed signs of improvement in their post-test marks after presenting their Prezi in class, while two students did not gain or show signs of decrease in their tests scores. The whole class displayed a higher gain in test scores with an average of 17% increase. The highest improvement shown

by one student was a 50% increase in test scores. It is also important to highlight the highest marks overall was by student number 19 with a score of 95%. This is no easy feat considering the level of difficuty of the questions in the tests, and the students' relative inexperience in answering test questions of this level. These improvements in students' learning indicated that Prezi could be effective as a learning tool since the students were engaged in the learning and this assisted them in the retention of their learning (Bender & Bull, 2012).

Table 1 Comparison of students' pre-test and post-test results

Student	Pre-test (%)	Post-test (%)	Increase/Decrease in marks
1	30	45	+15
2	20	30	+10
3	28	28	0
4	15	53	+38
5	18	20	+2
6	30	30	0
7	0	13	+13
8	15	33	+18
9	30	45	+15
10	0	25	+25
11	0	50	+50
12	38	60	+22
13	28	38	+10
14	38	40	+2
15	35	55	+20
16	33	0*	-33*
17	28	65	+37
18	0*	15	+15*
19	63	95	+22
20	8	38	+30
21	53	48	-5

Note: *Did not sit for the test but attended the Prezi workshop and presentations

Students' creations of historical presentations

Did the students learn more historical content when making their own Prezi? Based on the survey results, three students strongly agreed, thirteen students agreed to this notion, while five others were neutral. These reinforces the findings for the students' preferences in creating their own Prezi in learning history. Swanswick (2009) stated that Prezi forces the user to think about the relationship between the ideas that the user wants to present. Moreover, the students had a blank canvas for their thoughts and ideas like they would in a brainstorming session (Watrall, 2009). Therefore it is not surprising that the students would 'enjoy' learning through creating their own presentations and learn more effectively in comparison to for example, be given lectures.

The question of whether the students have understood their fellow peers' Prezi were heavily dependent on the quality of Prezi produced by the students and their skills of presenting in class. From the survey, 52% of the participating students answered that they understood everything. On the other hand, 43% understood most of the information but still had questions to be clarified on the subject matter. The other 5% had trouble understanding the information presented by the other students. About half of the participants (47%) stated that they have used Prezi before and therefore were familiar with the new technology. However, 38% said that they never heard and were not familiar at all, 10% of them had previously seen a Prezi presentation, and 5% had actually used and experimented with Prezi and had seen teachers used it to present in class before.

Although 38% were not familiar with the Prezi platform, it did not take long for them to learn the shortcuts and tricks to create their own Prezi. Some Prezi that they created were simple in comparison with the creation of the other long term users and they were still comprehensible enough to be presented to the audience. The students were also intrigued to see their fellow students' creativity in producing their Prezi.

It is also interesting to note, from the observations of the students' work, the boys' groups were quick to pick up on how to make a Prezi compared to the girls' groups. Many of the Prezi created by the boys did not have pre-determined backgrounds and layouts provided by

Prezi but instead they would rather be more creative and create their presentations on a blank canvas (see Figure 2).



Figure 2 Screenshots of Prezis created by the male students made from a blank canvas

The girls however, preferred to use the layouts provided by Prezi and built their presentations around this (see Figure 3). Leberecht (2009) stated that many first time users struggle with the challenge of filling a 'blank canvas' and thus become overwhelmed by the freedom created by a higher level of user empowerment. Hence, the girls' groups were more efficient and quick to complete the task while the boys were more interested in exploring the Prezi's capabilities.



Figure 3 Screenshots of Prezis created by the female students created from a template

Prezi prides itself in its capability, when organized properly. It is a platform that is simple and more concise to give its audience a more

enjoyable experience. There were instances where the students made full use of the color, simplicity and graphics to present their findings to the class. Figure 4 is an example of a well-organized Prezi that made use of bullet points that relied on the presenter to expand on their points.



Figure 4 Screenshots of a well-constructed Prezi

Meanwhile, the Prezi in Figure 5, although neat and organized, was full of complete sentences that made the viewing experience more tedious.

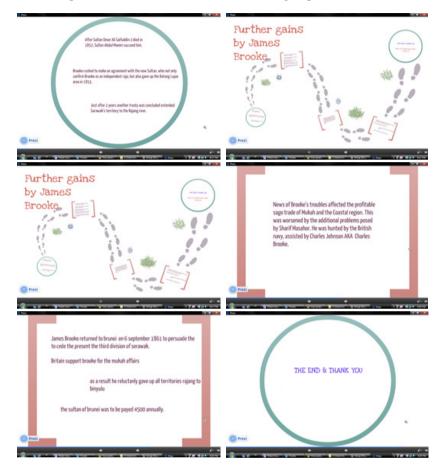


Figure 5 A Prezi that uses complete sentences

The students also made full use of the Prezi's capabilities of seamlessly incorporating graphics. They did not hesitate to incorporate pictures and maps through Prezi own search engine which allowed users to instantly enter graphics into their presentations and made their Prezi more interesting. Figure 6 is an example of this.



Figure 6 Screenshots of students using pictures into their Prezi

Prezi also prides itself in its zooming capabilities in its 2.5 dimensional environ. Most of the students did use this feature to full effect, and when used properly, kept the audience more in tune with the presentation and enhances their focus. Figures 7 and 8 are two examples of students using the zoom feature.



Figure 7 Screenshots of zooming in from one point (overview) to the next slide in the presentation



Figure 8 Screenshots of hiding points within the background of a Prezi

Participants' views in using Prezi

From the investigation on whether the students like using Prezi as their platform for creating presentations, the results indicated an overwhelming positive responses from the students to use Prezi in class. From the survey, 85% of students agreed to this statement because Prezi was new and appealed to their sense of creativity. These were mainly due to Prezi's way of presenting and conveying ideas. Consequently, 10% responded that they liked using Prezi because it allowed them to work in a group. In all probability, this is due to their disposition to work with others in producing group work. However, a small percentage of 5% stated that due to the unfamiliarity with the platform they struggled to come to grips with producing presentations using Prezi but with practice and more time given, they might come to like it.

On the question of whether the students would recommend Prezi to other history students for their presentations, 99% of the students responded positively. Therefore it could be surmised that there is a general preference for using Prezi in producing their history and class presentations in the future. In the survey, the students were also asked whether they would use Prezi again for their own history presentations in the future. Again, an overwhelming percentage of students said that they would use Prezi again. This may be interpreted as Prezi appealing to the younger generation to expand their creativity and produce higher quality presentations, rather than using the Microsoft's PowerPoint application. Moreover, Lloyd-Jones and Lewis (2000) and Spaeth (1996) were correct in their judgments that students were quick to recognize that the use of new IT skills were advantageous to their future career prospects in the short and long terms.

Although in the previous question of the survey, all of the students would use Prezi again, there was still a small percentage of students (5%) who still preferred using Microsoft's PowerPoint application. This may be due the PowerPoint's ease of use to produce presentations and Prezi's accessibility that requires logging on to the Internet. This reflects the fact that not all the students have Internet at home. Also, Adria (2009) mentioned that for the 'regular' presenter, the learning curve might be too steep, especially in the beginning.

In relation to students making their own Prezi and present them in class, 60% indicated this preference. This may be because some students prefer to learn by 'doing' rather than sit and listen passively to the teacher in the class. Although 37% preferred the method of immersing themselves to the teachers' presentation in class, these were more likely to be those students that had trouble producing Prezi and were unfamiliar with Prezi.

The average age of the respondents in this survey is 13 years old, and thus reflected with the twelve respondents that found using Prezi as 'fun'. The eight of the tech savvy respondents answered that Prezi's ease of use appealed to them while seven students responded that Prezi appealed to their sense of creativity. These substantiated the findings by Rogers (1978) that the use of images during the course of a history lesson would be 'fun' and 'more interesting', and alleviates their learning. Meanwhile four students stated that the Prezi's fresh approach to presenting and presentations won them over compared to using

PowerPoint. In addition, two respondents stated that Prezi was interesting and two others found that Prezi is visually attractive compared to PowerPoint.

One advantage of Prezi is that according to Leberecht (2009), the users can jump in and out of Prezi's linear paths and therefore enormous flexibility were provided in storing and presenting the information, which in the case of this present study, the 'users' are the Year 9 history students. Moreover, Leimbach (2010) noted that Prezi encourages users to use bullet points instead of paragraphs by limiting the size of its text boxes. And thus for the students, viewing a Prezi will be more concise and less tedious to read than a PowerPoint slide.

A somewhat surprising response from the students was that all of them would like their teachers to use Prezi instead of PowerPoint in the classroom as well as the history lessons. Meanwhile, ten students answered Prezi was 'fun and an interesting way to learn' in class while six students found that the use of Prezi by the teacher helped them to understand the subject matter. Another major reason for their preference for Prezi is that it 'fascinated' them and this may be due to the use of zooming images and non-linear presentation that Prezi offered.

An important aspect of using Prezi to teach is the flow of information to hold the students' attention span as well as to improve the students' understanding of the subject matter and the knowledge of the topic. In terms of the students' opinions on the Prezi presentation, 67% of the students found that the information was in order, made sense to them and flowed smoothly. On the other hand, 24% answered that the information did make sense but the flow of information in the Prezi slides did not flow smoothly from one section to the next. There were students who responded negatively to the presentation (9%), and they observed that the Prezi was disorganized, jumping from one section to the next. Adria (2009) pointed out to the unfamiliar interface as well as its dizzying zooming capabilities as culprits for audiences to lose interest.

The findings above were reflected in the students' opinions on their understanding to the content in the Prezi presentation, and 62% of the

students understood the content while 38% did say that they had understood most of information but had questions they would like to be answered and clarified by the teacher. This question in the survey addresses the teachers' performance in presenting the information and content in a clear, concise manner and language that is easily understood by the students as well as the overall Prezi presentation. Concurring with the statement by Bernhardt and Fischer (2006) earlier, it is important for teachers that uses Prezi to get the right mix of visual design, transition and content to increase the students' knowledge and interest.

Based on the four teachers' interviews on the use of Prezi. one teacher commented that while using Prezi to present in class, the constant zooming in and out did not appeal to him and was actually causing him to focus and refocus his vision just to keep up. He gave a negative view on using Prezi to teach as it required a certain amount of expertise and creativity to produce a quality presentation to hold the audience's attention. Another teacher stated that Prezi was a great way to teach young children as it will visually stimulate in aiding their learning and appealed to the students because of its 'coolness' factor together with the engaging graphics. Meanwhile, the same teacher liked the simplicity of the way Prezi moved in a non-linear fashion that when supported with animation and maps, students could learn additional information that might otherwise be unavailable to them. Lastly, a more 'experienced' teacher commented that it might be tough for her to deviate from her 'usual' method of teaching, and to learn a new skill in using new age presentation technology might pose a challenge. However, from her observations of history teachers using Prezi in history class, she saw students being entertained and interested in the lesson. She also advised teachers the need to explore other avenues to teach so as to keep Prezi 'fresh' and not 'overused'.

Conclusions

On average, students scored higher in the post-test compared to the pre-test results. Thus highlighting the preference and effectiveness for students to learn by 'actively doing' rather than just sitting and listening.

The effect of using Prezi as a tool to teach students can still be debated as there are many other avenues that teachers can use to effectively teach their students. PowerPoint might just be as effective as using Prezi, but as Spaeth (1996) pointed out, the use of new and updated technology and IT skills are just as important for the students' future in this modern age. Even though 38% of the students had never used Prezi before, they showed considerable interest and adaptability in creating their own Prezis. For most of them, it took some time to adapt to the interactive interface of Prezi in choosing the templates, how to insert texts as well as how to properly organize their 'slides' in an orderly fashion. Eventually, the students were able to adapt in creating their own Prezi.

Analyses of the survey data collected showed an overwhelming response in using Prezi as a learning tool. Prezi is the way to go and this cements the platform's growing popularity amongst the younger generation. A few students were still more accustomed to PowerPoint and its relative ease of use of creating presentations. This is the advantage of activity-based learning. The students were actually taking in more information in comparison to listening to the teacher's presentation where their attention span may be affected by their energy levels at the time in addition to their ability to focus and listen in class. Moreover, there were differing views from the teachers on the usefulness of Prezi to teach and learn historical knowledge. One had trouble keeping up with all the constant zooming in and out of the presentation, shich unfortunately gave him 'headaches'. To overcome this, when teachers use Prezi it is important to zoom in and out slowly in 10 second intervals if possible to avoid visual confusions. Another obstacle is the time involved to create a well-constructed and engaging Prezi. This is advantageous to the more 'creative' teachers that are able to 'see' and 'imagine' their finished products than those whose teaching styles and attitudes to IT are significantly different.

A prominent disadvantage that affects students and teachers alike is that in order to use and create Prezi, one needs to log in to the website online. With the irregularities of the Internet speed and connection in schools, it is sometimes tedious to log on and there is a certain amount of lag whilst creating Prezi. However, with a fast Internet connection, creation is seamless and making a Prezi presentation, according to the students, becomes 'fun'. Teachers can also opt to pay for an offline Prezi service, and again this serves as a deterrent to teachers and students alike.

The top three reasons why students liked using Prezi over PowerPoint was that it was fun, easy to use and its allowance for students to be more creative. From the students' point of view, their preference for their teachers to use Prezi was that it was 'fascinating' to see, helped them understand the subject matter and the fun and interesting way for them to learn. However, these reasons relied heavily on the quality of presentations by the teachers and the students. Similarly applying to information that flows well from one part to the next so that the students will be able to follow. Most students in this study agreed that they learnt more when creating their own Prezi. Consequently, the students with better presentation skills will be able to convey information more efficiently to other students and the quality of their presentations will also be paramount in increasing the students' understanding of the historical content.

Based on the findings that the students' motivation in learning history through the use of Prezi in class, this present study implies that promoting teachers to use Prezi in their teaching could lead to an improvement of students' performance in history examinations. Therefore, to improve the students' historical knowledge and overall interest in the subject of history, the teachers' motivation to use Prezi should be stimulated. To stimulate the teachers' motivation to use Prezi, it is essential to remove the cost barrier to use Prezi offline. Access to fast Internet at school, at home together with the cost of using Prezi are of great importance because these are the most influential factors that decide the success or failure of the approach.

It is also recommended when introducing and teaching Prezi to students and to teachers, it is important to stimulate them to think about how to begin by putting particular emphasis in a well demonstration of Prezi that will encourage participation in class discussions.

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