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Implementing the Flipped Classroom Model in the Teaching of History

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Abstract

This study investigated the effectiveness in implementing the Flipped Classroom model in teaching History and to identify the students' perceptions using this approach towards their learning. The chosen History topic was on 'James Brooke's activities in Sarawak in the 1840s'. The sample consisted of twelve students from two Year 9 classes in one of the secondary schools in Brunei Darussalam. In adopting the Flipped Classroom approach, the students were required to watch a video lesson outside the classroom setting. To measure its effectiveness, a test instrument was used, and five students were interviewed. The findings revealed that the utilisation of this instructional method was effective in teaching History, as there were improvements in the students' test results. The analyses of the students' perceptions using this approach revealed that while some students believed that it helped them improve in their communication and writing skills, others did not perceive it effective for their learning.

Keywords: *Flipped Classroom, Effectiveness, Learning process, History*

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Introduction

The number of students taking History subject is decreasing in some secondary schools in Brunei Darussalam suggesting that students are less interested to learn History. Some students think that History is all about memorising dates and events and therefore view this subject as less attractive (Mahadi & Shahrill, 2014; Aidinopoulou & Sampson, 2017; Idris et al., 2017). Teachers often complain that students are passive in class as they only watch and listen to the explanations given by their teachers (Shahrill, 2009; Chua & Lateef, 2014; Tong, 2014; Manjanai & Shahrill, 2016). The students are also not fully prepared when they enter class and on the tasks given by their teachers, and this prevented them from participating in class activities.

Utilising the Flipped Classroom approach can be one of the solutions to the problems mentioned earlier by the teachers. It is a pedagogical approach that can be defined as students receiving the lesson content outside the classroom, and in class it can be used for the development of skills and practice (Bergmann & Sams, 2012a, 2012b). It is a reverse of traditional classroom where lectures are delivered within the classroom setting. Whereas in the Flipped Classroom the lectures are viewed, for example watching a video, before entering a class. Subsequently, more time is available for teachers to carry out class activities in order to help students understand the lesson better. Using this approach is also beneficial for teachers because it helps to shift the traditional methods of teaching to a more active and student-centred learning environment (Day & Foley, 2006; Fulton, 2012).

The Flipped Classroom is not a new concept and has been used since the 1990s. In 2007, Jonathan Bergmann and Aaron Sams, two high school chemistry teachers from Colorado, United States, integrated the digital technologies in conducting this pedagogical approach where they began to record lectures using videos for their students who missed classes due to their involvement in athletic competitions. The students enjoyed the videos and thus, Bergmann and Sams began to record more lessons using videos (Bergmann & Sams, 2009, 2012a, 2012b, 2014; Colborn, 2012). Flipped Classroom or also known as 'inverted classroom' can be defined as a pedagogical approach where students use videos to learn the lesson contents (Lage et al., 2000; Fulton, 2012; Zhao & Ho, 2014; Zainuddin & Halili, 2016; Lo & Hew, 2017). In Flipped Classrooms, lectures are recorded as videos and will be posted either online or saved in storage devices such as CD-ROMs and pen drives. Students will view these at home as their homework, and during class the students will be given student-centred activities by the teacher such as presentation, discussions, problem solving and debate. The teachers will only facilitate their students and provide them with constant feedback (Flumerfelt & Green, 2013). Hence, Flipped Classroom helps to shift from teacher to learner centred as the learning tasks depend on the preparation of the students before entering the class as well as their engagement within the class.

According to Lage et al. (2000), the students preferred this pedagogical approach because it provided a flexible learning environment, and they were comfortable to ask questions and discuss openly. They also found that Flipped Classroom gave the teachers more time to spend with struggling students whilst the advance learners could work independently. Moreover, the students are given the freedom to control the amount of information from the video such as replayed the video to the parts that they did not comprehend (Fulton, 2012). And the students' results can be improved by applying the Flipped Classroom method (Bishop & Verleger, 2013). The feedback from the teacher also revealed several advantages on Flipped Classroom, for example it motivated students to learn more in class and this model also increased the teacher's professional satisfaction (Colborn, 2012; Mazur et al., 2015). Based on these studies given so far, they recommended the need for teachers to try this method to improve their pedagogical approach as well as to shift students' learning from passive to active learning environment.

There are also a number of critiques on the application of the Flipped Classroom. The students in a study by Strayer (2007) complained that they were not fully prepared before entering the class, as they did not watch the video lecture at home. He thus concluded that this approach would only be effective based on the willingness of the students to participate in the learning activities. Furthermore, according to the findings by Johnson and Renner (2012), the students were reluctant to participate in this instructional method since it was not part of their school culture. And contrary to previous studies, Arnott and Planey (2017) found no significant difference on the student performance or perception when traditional and flipped classroom pedagogies were employed.

Previous studies on Flipped Classroom were mostly done in higher education and it is also widely used in disciplines covering Mathematics, Sciences and Health Sciences. For Brunei Darussalam in particular, there are only few secondary school level teachers who had implemented the Flipped Classroom approach (Nawi et al., 2015; Manjanai & Shahrill, 2016). Thus, the purpose of this study is to provide an insight into the implementation of a Flipped Classroom in History lessons. Specifically,

this study investigated the effectiveness of Flipped Classroom in the Year 9 History lessons as well as the students' perceptions on this model of learning.

Methodology

Action Research was the methodology used in this research study. It can be defined as a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in a participatory worldview, which we believe is emerging at this historical moment. In action research, the teacher needs to be reflective. Firstly, she/he identifies the students' problems in learning a particular subject and later she/he would intervene by carrying out suitable pedagogical approaches as solutions to these problems (Jawawi, 2010). The use of action research approach aimed to improve students' performance as well as to help teachers improve their professional development needs (Jaidin et al., 2014; Wood et al., 2017).

This present study was conducted in one of the secondary schools in Brunei, involving two Year 9 classes. Initially, the number of students who participated in this study was fourteen. However, two students were not included as they were absent for the whole week when this study was conducted.

The pre- and post-tests were used to compare the performances of the students before and after flipping the classroom. Both tests were graded according to marks given to evaluate the differences before and after this approach was implemented. Due to the small number of participants in this study, a qualitative approach was used in collecting the data. An interview was conducted which aimed to gain insights on how the students viewed Flipped Classroom. Only five randomly selected students were interviewed after they completed the post-test. The interview consisted of ten questions and no voice recorder was used during the interview in order to make the students more comfortable in answering the questions. Their answers were recorded in written form to preserve the accuracy.

The topic chosen for this study was on 'James Brooke Activities in Sarawak in 1840s' and was conducted within three lessons. For the first lesson, a pre-test was given to the students and they were allowed to refer to their textbooks to answer the questions. Then, they were required to watch a short video lecture, outside the classroom setting, on the events that led to the appointment of James Brooke as the Governor of Sarawak and Rajah of Sarawak in the nineteenth century. Note that Sarawak is one of the Malaysian states located in the island of Borneo. The students were also instructed to answer a short quiz while watching the video. This video was stored in a CD-ROM and given to each student. For the second lesson, the students were organised into three groups for the class activities namely, group discussions and presentations based on the video content. In the last lesson, they were given thirty minutes to complete the post-test without referring to the textbook or the notes. The comparisons between both tests were analysed and an interview was conducted to investigate their views on the Flipped Classroom approach.

Results and Discussions

As mentioned previously, the pre- and post-tests were the instruments used to measure the effectiveness of the Flipped Classroom instructional method in teaching History to the Year 9 students. First, we analysed and compared the students' responses to each question in the pre- and post-tests. It was found that for Question 1 in the pre-test, only four students managed to identify the three places that James Brooke wanted to visit before he went to Sarawak in the 1840s. There were eight students who misunderstood the question by stating that the places Brooke wanted to go before 1840s were Sarawak, Kuching and Singapore. However, after the Flipped Classroom was implemented, all the students managed to answer the question correctly by stating that the three places he wanted to go were Marudu Bay, Sulu Island and New Guinea (refer to the responses by Student 7 and Student 10 shown in Table 1).

Table 1. Comparisons of the students' answers in the pre- and post-tests for Question 1

Student No.	● Pre-test (Question 1) <i>Where did James Brooke want to visit before going to Sarawak in 1839? (3 marks)</i>	● Post-test (Question 1) <i>Name three places that Brooke wanted to visit before going to Sarawak in 1839. (3marks)</i>
Student 7	Before James Brooke going to Sarawak in 1839, he wanted to visit Kuching.	The three places that James Brooke wanted to visit before going to Sarawak was Marudu Bay, Sulu Islands and New Guinea.
Student 10	In 1838, when he reached Singapore, he heard of the antimony ore in Sarawak.	The three places that Brooke wanted to visit were Marudu Bay, New Guinea and Sulu Island.

Question 2 in both the tests was similar, where it asked about the factors for the coming of James Brooke to Sarawak in the nineteenth century. In the pre-test, two students did not provide any answers to this question and the remaining students did not score full marks since they had missed out on some points. In contrast, there were improvements in the students' post-test marks whereby seven of them managed to get full marks for this question. They even further linked the reasons to the involvement of James Brooke activities in the administration of Sarawak (refer to the responses by Student 6 and Student 11 given in Table 2).

Table 2. Comparisons of the students' answers in the pre- and post-tests for Question 2

Student No.	<ul style="list-style-type: none"> Pre-Test (Question 2) <i>Why was James Brooke interested in Sarawak in 1838? (4 marks)</i> 	<ul style="list-style-type: none"> Post-test (Question 2) <i>Explain the reasons for the coming of James Brooke to Sarawak in the nineteenth century. (4 marks)</i>
Student 6	James Brooke interested in Sarawak because Sarawak have a lot of antimony ore.	The reason why James Brooke to Sarawak because he heard Sarawak have a lot of antimony ore and conflict between Pengiran Indera Mahkota and local. So, James Brooke takes advantage to control Sarawak or to get Sarawak.
Student 11	James Brooke interested in antimony ore in Sarawak.	The reason of James Brooke came to Sarawak in the nineteenth century because Sarawak was rich in antimony ore. There was a conflict between the local people and Pengiran Indera Mahkota because he forced the people to extract more antimony. This gave him a chance to be the new governor.

Question 3 in the post-test was similar to the third and fourth questions in the pre-test. There were three students who did not respond to the question in the pre-test and nine of them only managed to score 2 out of 6 marks. In the post-test, there were changes in the students' answers for example the answers given were more detailed and organised (refer to the responses by Student 2 and Student 10 in Table 3). Overall, seven students managed to get full marks and the others scored four marks.

Table 3. Comparisons of the students' answers in the pre- and post-tests for Questions 3 and 4

Student No.	<ul style="list-style-type: none"> Pre-test (Question 3) <i>What were the conflicts in Sarawak in 1840s? (4 marks)</i> Pre-test (Question 4) <i>How did Pengiran Muda Hashim solve the problems? (2 marks)</i> 	<ul style="list-style-type: none"> Post-test (Question 3) <i>Describe the events that led to the appointment of James Brooke as the governor of Sarawak in 1841. (6 marks)</i>
Student 2	<ul style="list-style-type: none"> Question 3 Conflicts in Sarawak in 1840. Question 4 Pengiran Muda Hashim solve the problem. 	<ul style="list-style-type: none"> Question 3 The event that led to the appointment of James Brooke the governor of Sarawak in 1841 because conflict between Pengiran Indera Mahkota & the local people headed by Dato Pengiran Patinggi. This war because Pengiran Indera Mahkota forced local people to get antimony ore. Sultan Omar Ali Saifuddin II sent Pengiran Muda Hashim from Brunei to stop the conflict. Pengiran Muda Hashim want to asked help from James Brooke and promised to give Sarawak administration. James Brooke could stop the rebellion by removing Pengiran Indera Mahkota and became governor.
Student 10	<ul style="list-style-type: none"> Question 3 He realized that apart from the rebellion there was also a conflict between Pengiran Indera Mahkota and Pengiran Muda Hashim. Question 4 No answer 	<ul style="list-style-type: none"> Question 3 The event that led to the appointment of James Brooke as governor of Sarawak in 1841. Firstly, there is a conflict between Pengiran Muda Hashim and the local people headed by Dato Pengiran Indera Mahkota. He forced the local people to get more antimony. This led SOAS II to send Pengiran Muda Hashim to end the conflict. But he could not do it so he asked help from James Brooke and offered him Sarawak administration.

Question 4 of the post-test relates to Question 5 of the pre-test. These questions asked for the strategies that were used by James Brooke to ensure his appointment as the new governor in Sarawak, was acknowledged by Sultan Omar Ali Saifuddin II. In the pre-test, six students did not answer the question correctly because they explained the events after 1842 instead of explaining the Treaty of 1842. However, there were improvements in their answers in the post-test because almost all students

scored full marks for this question. The student's answers were also more detailed as compared to the pre-test (refer to the responses by Student 9 and Student 12 shown in Table 4).

Table 4. Comparisons of the students' answers in the pre- and post-tests for Questions 4 and 5

Student No.	• Pre-test (Question 5) <i>How did James Brooke become the governor of Sarawak in 1842? (4 marks)</i>	• Post-test (Question 4) <i>Explain the methods used by James Brooke to make him an official governor of Sarawak in 1842. (4 marks)</i>
Student 9	James Brooke become the governor of Sarawak in 1842 because Pengiran Muda Hashim removed Pengiran Indera Mahkota and appointed James Brooke as the new Governor of Sarawak in 1841.	James Brooke become the governor of Sarawak in 1842 by forcing Sultan Omar Ali Saifuddien II to sign the treaty of 1842 which he was appointed as the Governor of Sarawak. He cannot take Sarawak from Brunei, he had to pay \$2,500 every year to the Sultan and he cannot remove Sarawak's religion. Culture and tradition.
Student 12	James Brooke become the governor of Sarawak in 1842 when Pengiran Muda Hashim removed Pengiran Indera Mahkota.	Firstly, James Brooke forced SOAS II to sign treaty of 1842. Secondly, this treaty made James Brooke officially governor of Sarawak in 1842. Finally, the terms of treaty was that James Brooke paid \$2, 500 every year to Sultan, became governor of Sarawak, Sultan cannot disturb Sarawak, could not remove Sarawak from Brunei and could not remove Sarawak's culture and religion.

Table 5 below shows the students' comparative results for their pre- and post-tests. The findings indicated that there were marked improvements in the post-test. Although the students had learnt the concept of colonialism when they were in Years 7 and 8, the results of the pre-test showed that they did not fully understand this concept. Only two students passed in the pre-test (with 53% and 58%) and the others only scored less than 40%. However, after flipping their class, the students' results improved. In the post-test, all the students passed and scored more than 70%. The highest mark was 96% scored by Students 3, 8, 11 and 12, while the lowest mark was 76% scored by Student 7. The students' quality of writing also improved in the post-test as compared to the pre-test. Their explanations to the questions asked were relevant and more detailed in the post-test as seen in Tables 1 to 4 earlier. The class activities in this present study, namely the group discussions and presentations greatly affected their academic performance. As a result, the systematic way of constructing the students' knowledge made them to understand the concept of colonialism better and hence, improve their marks in the post-tests.

Table 5. Comparisons between the pre- and post-test marks (in percentages)

Student No.	1	2	3	4	5	6	7	8	9	10	11	12
Pre-Test	0	0	40	26	18	53	35	58	26	12	12	41
Post-Test	92	92	96	92	88	88	76	96	92	84	96	96

Students' Views on Flipped Classrooms

The students were also interviewed regarding their views on Flipped Classrooms in the History lessons. Firstly, the students were asked about their experiences in watching the video lecture and the differences between listening to the teacher in the class and watching the video lecture. All of them stated that the video lecture could be controlled, stopped, rewound, forwarded and slowed down. It was easier for them to learn the lesson according to their own paces. However, two students stated that if they listened to the teacher's lecture in class, then they could ask questions directly to the teacher.

Subsequently, the students were asked in what ways the video lecture helped them to understand the topic on 'James Brooke Activities in Sarawak'. Only three students mentioned that they had a better understanding of the James Brooke's activities in Sarawak after watching the video. As stated by one student, the simple explanations and the colourful images made them understand and remember the important names, places and events. The positive feedbacks from the students showed that they favoured the use of video in their learning. It was one of the factors that led to the improvements in the students' post-test marks. Similar findings by Bergman and Sams (2009) and Fulton (2012) showed that using video helped students to learn the lesson at their own pace since the video could be paused and the availability of the rewind and forward actions. In addition, watching the video made the students become more responsible for their own learning.

Franciszewicz (2008) stated that students found alternatives in accessing the video lecture. Not all students had the facilities such as computers to watch the video at home, but they made efforts by watching it at the school computer lab and using their friends' laptops. He further noted that the

video made the students more prepared before entering the class as some of them prepared a number of questions for the actual lesson and constructed their own mind-map in order to understand the video lecture. However, not all students enjoyed the video lecture in the present study's Flipped Classroom approach, because they still preferred their teacher to explain the topic in class, just like in the traditional classroom. The two students did not favour the video lesson because some of the explanations were difficult to understand and the many names mentioned in the video confused them. Another student further added that he could not ask questions to their teacher directly, which made it more complicated. These findings supported what Johnson and Renner (2012) found in which the students were reluctant to watch the video since it was not part of their school culture. Apart from that, this also showed that not all students were visual learners since they still preferred the traditional way of instructions and needed aids from their teacher to understand the topic.

In this present study's approach, the students were given an opportunity to construct their own knowledge with the guidance of teacher. When the students were asked what they liked about their teacher during the class activities, they provided positive feedbacks such as they enjoyed the way the teacher scaffold their learning and the personal feedbacks given by the teacher. They also appreciated the opportunity to participate in the class presentations and discussions, which in turn motivated them to learn in class. With this approach, the teacher had more time to focus and give feedbacks to each student. Similar to the findings by Colborn (2012), Nawi et al. (2015) and Manjanai and Shahrill (2016), the teacher was able to help those who were left behind and the advanced students could move ahead if the task given was easy for them. Exercising this approach also helped to identify students' misconceptions in order to prevent them making the same mistakes in answering the exam questions in the future. Moreover, the students favoured the role of their teacher as a facilitator because it provided them with a positive learning environment that motivated them in their learning.

The students were also asked what they liked about this approach, and three students said that they liked the activities especially on the presentation as it helped them to understand the topic better. They also enjoyed working as a team in completing the tasks. The answers given by the students showed that what they liked most about Flipped Classroom was the learning activities whereby they learnt more when they were engaged in the process of learning, for example through group discussions as they could help each other in completing the task given. However, two students stated they disliked Flipped Classroom because not all of their team members were cooperative. Some of their group members did not fully participate in the class activities and they did not have the facilities such as laptop and desktop to watch the video at home. This shows that not all students have similar ways of learning, attitudes and personalities. In fact, some students were shy and preferred not to talk in front of their classmates. It is important that teachers need to ensure that all participants have the chance to participate and contribute in the learning activities despite these differences. Importantly, the lessons need to be interesting and challenging in assisting the students to construct their knowledge. Some students also mentioned that they did not have facilities at home to access the video for example owning a computer and smart phones. As suggested by Bergmann and Sams (2012a, 2012b, 2014), the students need to be given other options to watch the video such as saving it in the storage devices or allowing them to watch the video by using the teachers' laptop before the actual lesson so these students would not be left behind during the class activities.

When asked if this pedagogical approach could be applied to other subjects, all of the students would like other subject teachers to use this approach since it proved effective in their learning. They mentioned that they would be more confident in their learning since the task or information was to be given before the class. It would also provide the teachers more time with the students, especially in subjects that require additional explanations or guidance such as Mathematics.

Conclusion

The findings in this study showed the effectiveness of using the Flipped Classroom model in the learning of Year 9 History. There were significant improvements in the students' post-test results. The elements of this approach such as the use of video and class activities were responsible for the success of this instructional method. Positive feedbacks were obtained regarding the Flipped Classroom, for instance some students favoured this approach because it provided them with more time to understand the concept with the help of their teacher. Bergmann and Sams (2012a, 2012b) mentioned that misunderstanding exists on the use of Flipped Classroom because some teachers thought that this pedagogical approach only suited the Mathematics and Science, or subjects that involve solving problems. Nonetheless, this teaching technique could be used in any subject area especially with the use of video outside the classroom and subsequently conducting activities within the class.

There were several limitations of the study. Firstly, since there were limited resources of videos on Brunei History, new video lectures had to be created for the students to view before the actual class. It was a great challenge to create the videos particularly if one lacks the necessary skills and knowledge in making the videos, which eventually made the process of video making time consuming. Secondly, it was also time consuming to conduct the learning activities in the class because the activities required the students to construct their own knowledge by being more critical, proactive and analytical. This learning environment was still new to them and it took time to adapt to the new learning style and to understand how it worked.

The following are the recommendations to those who wish to pursue further research using this pedagogical approach. The teacher needs to be careful in choosing the topics that are related to real world situations, and the activities should be related to the video content. Problem-solving activities needs to be provided as well, for example asking students to add on extra information to the video by referring to other websites or resources. In class, the students will then be required to present what they have found from the video and the Internet. This will encourage them to explore and be independent learners in constructing their own knowledge. And lastly, the teacher needs to provide other alternative avenues for students to watch the video, such as by sending the video links through their emails, or stored in storage devices or allowing the students to watch it at the school computer lab. This will ensure that all students have the opportunity to watch the video and to participate in the class activities.

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