STIMULATING CRITICAL THINKING AMONG TERTIARY STUDENTS THROUGH YOUTUBE VIDEOS AND INTERACTIVE ACTIVITIES: A REFLECTIVE JOURNEY

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ABSTRACT

The purpose of this action research was to investigate the use of YouTube videos and interactive activities in stimulating critical thinking among students from a public university in Malaysia. There were 50 students of mixed background comprised of local and foreign students participated in this study which lasted for one semester. Data was collected using a few approaches which include video recording of the lessons, students’ and researcher’s reflections. In this paper, we specifically focus on the students’ reflections of their experience while using YouTube Videos. Thematic analysis was conducted to examine the themes that emerged in their reflections. Using Lewin’s Action research model supported by Constructivism Theory, a-four stage action research consisted of planning, acting, observing and reflecting were conducted. We found that YouTube Videos were fun and interesting, increased students’ participation and engagement and enhanced their critical thinking skills. The students were able to participate actively and demonstrated strong interest in the learning process as they were able to understand lectures better by visualizing the content and relating it to real workplace. Our study revealed the potential of YouTube Video as a tool for stimulating students’ learning and enhancing their critical thinking.

Field of Research: critical thinking, tertiary education, YouTube, Action Research, Constructivism

1. Introduction

The importance of critical thinking has received the attention of so many parties in Malaysia ranging from educators to future employers (Eldy & Sulaiman, 2013; Ismail, 2011; Shah, 2011). As such, having good grades alone do not promise employment for graduates in Malaysia. Studies have shown that in order for Malaysian graduates to be employed, they must possess a good command of language with sound analytical thinking, intelligence, independence, leadership, communication and computer skills and work experience (Ismail, 2011). It has been reported that Malaysian graduates failed to meet the expectations of the prospective employers. In fact there has been a rise in the criticism towards the Malaysian graduates as having a lack of scientific and technical knowledge, critical and creative thinking ability as well as poor communication skills (The Star, 2012). On top of that, the industrial players continuously complained about the quality of the Malaysian graduates which created a need for more research to be carried out to identify causes of such problems (Eldy & Sulaiman, 2013). In addition, studies also revealed that the current state of the problems which have contributed to the incompetency of the Malaysian graduates was due to the failure of the
Evidence on the lack of cognitive thinking skills among the Malaysian students has been alarming given the report carried out by the Programme for International Student Assessment (PISA) and the Trend in International Mathematics and Science Study (TIMSS) (Ministry of Education, 2012). The studies by TIMSS and PISA were mainly assessing the cognitive ability such as knowing, application, reasoning and applying of knowledge in real world settings. The TIMSS study in 2007 found that the average performance of students in Malaysia in both Mathematics and Science had been deteriorating and fell below the international average even though in 1999, Malaysian students performed above the international average. The study also found that 18% and 20% of Malaysian students failed to meet the minimum proficiency levels in Mathematics and Science, even though it was 2 to 4 times increase from 7% and 5% respectively as compared to 2003 (Ministry of Education, 2012). Additionally, the PISA results in 2009 indicated that Malaysia was ranked 3rd from the bottom among the 74 participating nations whereby approximately 60% of the 15 year old Malaysian students participated in the assessment, failed to meet the minimum proficiency level in Mathematics, while 44% and 43% did not meet the minimum proficiency level in Reading and Science. A difference of 38 points on the PISA scale is equivalent to one year of schooling. Therefore, in comparison, 15-year old students in Singapore, South Korea, Hong Kong and Shanghai are performing as though they have had 3 or more years of schooling than 15-year olds in Malaysia (Malaysia Education Blueprint, 2012).

In response to this phenomenon, the Ministry of Education has recently launched the Malaysian Education Blueprint which among the highlights is to introduce the Secondary School Standard Curriculum (KSSM) and the revised Primary School Standard Curriculum (KSSR) and to embed a balanced set of knowledge and skills such as creative thinking, innovation, problem-solving and leadership (Malaysia Education Blueprint, 2012). Though the above studies indicated the performance of students at the school level, the outcomes of the findings seriously need to be considered by decision makers at the tertiary level as many of them may eventually further their studies at the local universities. As such there will be a spillover effect which sees students with similar cognitive thinking deficiencies continue to dominate the higher education spectrum in Malaysia.

2. Critical Thinking

Critical thinking has often been cited as the most important outcome of education (Halx & Reynold, 2006). It has been defined as an “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it” (Dewey, 1910, p. 9). He further suggested that when one engages in quality thinking, one will try to connect between what has been done and consequences of the action. In other words, one would plan for the thinking and constantly questioning the conclusion that has been made.

Often the traditional educational approach at the tertiary level of education has been condemned for its lack of ability in developing critical thinking and problem solving skills among the students (Delisle, 1997; Lemke, 2001). This is because in the traditional approach to education, the vital role in teaching and learning is often played by teachers which resulted in a teacher-centered approach (Spence, 2004). Consequently, the importance of learning from the student perspective has often been neglected by the teacher. This is because, in the context of teacher-centered, students are often guided closely by the teachers and frequently the solution to problems are given by the teachers rather than self-discovered by the students. Therefore students often end up being dependent on the teachers and not being able to think of a solution to problems. In fact, the
existence of teacher-centered approach has been criticized for neglecting the importance of developing curiosity and a good sense of enquiry among the students at the institution of higher learning (Boud & Feletti, 1991). As such, it is now important for the institutions of higher learning to execute new approach to teaching which is of student-centered rather than teacher-centered to foster critical thinking skills among them as outlined in the Malaysian Education Blueprint 2013.

3. YouTube in teaching and learning

Access to computers and the Internet is no longer a major issue of concerns even so for those from lower income group (Atkinson, Billing, Desmond, Gold, & Tournas-Hardt, 2007; Kudryavtsev, Krasny, Ferenz, & Babcock, 2007). The use of videos has become so rampant that they are even available through mobile devices. In fact the use of film and videos to complement teachings has been widely promoted back in the 1950s (Marchionini, 2003). The availability of educational technologies and self-produced videos placed on YouTube also had made teaching more exciting. Many studies investigated the use of YouTube for teaching and learning in various disciplines such as in nursing (Agazio & Buckley, 2009; Clifton and Mann, 2011; Skiba, 2007), in teaching English as a Foreign Language (EFL) (Kelsen, 2009) and many others. In nursing for example, Clifton and Mann (2011), found that the use of YouTube videos increased student engagement, critical awareness and facilitated deep learning. Furthermore, these videos could be accessed at any time of the day and from a place to suit the students. Apart from that, YouTube is also used to illustrate theoretical content, involve students, and inspire innovative teaching methods (Agazio & Buckley, 2009). They recommended faculty member to use this technology to stimulate student discussions, share information, and create a learning community. YouTube is also used as a supplementary material with EFL students in Taiwan. Kelsen (2009) conducted a survey on 69 sophomore students and found that they rated the use of YouTube to study English favorably with regard to it being interesting, relevant, and beneficial. In another study, sixty-one graduate and twenty undergraduate students took part in a study using the MovieMaker software to design student created tutorials on material learned in class, whereby participants uploaded finished movie tutorials to the Internet-based website. The results showed that the YouTube tutorial methodology had a significant positive effect on perceived student learning (Fralinger & Owens, 2009). It is evident that YouTube Videos brought about positive effects to teaching and learning in various disciplines.

The attractiveness of videos in teaching comes from the combination of images and sounds. As such it will be able to generate an influential medium that can be used by teachers to help explain concepts while at the same time able to instruct students with content that provides multiple senses. These would certainly assist teachers in making the explanation of abstract concepts and processes easy through the use of visualization that can be provided by videos (Casey, 1996; Chee, 1995). The importance in using videos in teaching becomes more apparent among the students of distance learning in which face-to-face teaching is not necessary (Chang, 2004). However, studies have shown that the use of the videos may not only be limited to students of distance learning per se. This is because the advancement of the Internet technologies created greater opportunities for delivering educational videos more easily and thus can be applied at all levels of education as long as there are internet connections (Vural, 2013). Vural (ibid) also indicated that there seemed to be a lack of research conducted on the use of videos in the YouTube supported by interactive activities.

4. Underpinning Theory

Guided by the constructivist learning theory and the Cognitive Information Processing Theory, we conducted our search to examine the use of YouTube videos in stimulating students’ critical thinking. We were interested to explore the extent in which the use of YouTube Videos and interactive activities stimulated students’ critical thinking. Constructivism basically derives from Piaget’s work...
which focuses on the internal, cognitive or conceptual development of the learners (Sierpinska & Lerman, 1996). It is often being referred to the idea that learners construct knowledge for themselves. This theory stipulated that learners do not merely comprehend encountered information but they will also engage in organizing and making sense of all the gathered information based on their prior knowledge, experience, mental structures, and beliefs (Ormrod, 2004). The goal of the constructivist instructor is to provide support, while the student engages in the active process of constructing knowledge (Boghossian, 2006). The approach employs realistic learning environments, social classrooms that encourage multiple perspectives, and self-awareness of one’s own learning capabilities. As such, constructivism is supporting student-centered learning approach in which the learners play a critical role in the teaching and learning process. In active learning learners will be more engaged and thus, it can motivate learning as compared to passive learning approach (Leidner & Jarvenpaa, 1995).

The cognitive information process theory on the other hand, helps to explain the cognitive processes used in learning (Leidner & Jarvenpaa, 1995). The theory focused on the role of the memory in learning. The theory which is an extension to Piaget’s work stipulated that when information is received, it will be organized in groups and the individual will try to connect with previous knowledge and then transfer and encode it in memory to store and this information will be retrieved from the memory when there is a need to apply the knowledge across a learning environment (Vural, 2013). Thus, the theory suggested it is necessary to use various instructional strategies which will capture the learner’s attention, support the encoding, retrieval and provision of meaningful information which can be used across the learning environment (Reiser & Dempsey, 2007). This theory suggested learning will be effective if instruction method is done based on learners learning styles (Boya, 1981). Besides, when learners have prior knowledge about the subject, process of learning will be effective as such when instructional support exists, learner will be able to obtain any missed knowledge from the existing knowledge that they are supposed to gain (Boya, 1981).

5. Methodology

This study employed a qualitative approach using an Action Research (AR) method to investigate the use of YouTube videos in stimulating students’ critical thinking. The AR used was mainly based on the approaches from Lewin (1946), McNiff and Whitehead (2002); and McNiff, Lomax and Whitehead (1996). McNiff and Whitehead (2002) stated that “an action research is a name given to a particular way of researching your own practice. It is a practical way of looking at your practice in order to check whether it is as you feel it should be. If you feel that your practice is satisfactory you will be able to explain how and why you believe this is the case; you will be able to produce evidence to support your claims. If you feel that your practice needs attention in some way you will be able to take action to improve it, and then produce evidence to show in what way the practice has improved” (p.16).

The AR adopted in this study is a small scale study with started with an intention to start researching into own practice, and the researchers went through the following stages: deciding the issue to be researched, planning, action, observation and reflection. The action research project in this approach focused on improvement of classroom practice and teacher actions were therefore very similar to the practices that teachers engaged in daily in their classrooms. For example daily teacher actions such as reflection on the effectiveness of teaching methods and strategies or analyzing student performance to modify strategies for teaching are processes that are also integral to AR (Jaipal & Figg, 2010). In this study, the researchers managed to complete three AR cycles. In addition, both students and researcher reflected on their experiences as suggested by earlier studies (Schon, 1983; Norton, 1994). Schon (1983) claimed that reflection is vital for teacher’s professional development. Even though there are varied definitions of reflection ranging from a form of problem
solving (Bigge & Shermis, 1992); making sense of the world (Brubacher, Case & Reagan, 1994) to the one which defines reflection as the ability of the teacher to think creatively, imaginatively and critically about classroom practice (Norton, 1994), the act of reflection has been a paramount stage in an action research. In the context of the relationship, one of the researchers played the role of a participant who was also teaching the course.

5.1 Sample and data collection method

Data was collected using a few approaches mainly through video recordings of the lessons and students’ and researcher’s reflections. There were three cycles altogether in this action research carried out in the span of 14 weeks with one and a half hour session for each cycle. Research ethicality was also considered as suggested by Hair, Black, Babin, Anderson and Tatham (2006). Participants were informed beforehand of the purpose of the research and they were assured of confidentiality that all information obtained would be used only for teaching and learning purposes.

The first session was conducted with the use of YouTube video while the second and the third sessions incorporated the video production by the students and their reflections on the use of video as a teaching and learning tool. All the data were recorded, transcribed verbatim and analyzed using emergent coding. However, in this paper only the students’ reflection data were reported.

This study was conducted among 50 undergraduates who were undertaking BSMH2013 Human Resource Management course which emphasizes on the functions of human resource management and their importance to organizations. It also highlights the role of a human resource manager in managing strategic human resources in an organization to develop and maintain its competitiveness in the global marketplace.

Table 1 shows the number of respondents based on gender. Out of 50 students participated in this study, male and female students were equally divided.

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<th>Cumulative Percentage</th>
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Table 2 indicates the number of respondents based on nationality. 54% (N= 27) of the total respondents were made up of Malaysian students while students from Indonesia formed the second largest group which comprised of 26% (N=13) of the total number of respondents. The rest of the respondents came from various countries such as Nigeria (6 %, N= 3); Thailand (6%, N=3); Somalia (2%, N=1); Pakistan (2%, N=1), Brunei (2%, N=1) and Uzbekistan (2%, N=1).
### Table 2: Number of respondents based on nationality

<table>
<thead>
<tr>
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<th>Frequency</th>
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### 6. Finding & Discussion

One of the main objectives of this study was to examine the extent in which the use of YouTube Videos increased the critical thinking abilities of the students. Our findings indicated that generally the students had a positive view of the use of YouTube Videos in the classroom. They mentioned that YouTube Videos made the lesson fun and interesting, were relevant and managed to attract their attention.

1. **Make the lesson fun and interesting**.

Students F and D mentioned that YouTube videos were interesting not like the traditional lecture using textbook and it was more memorable and they learned better.

> “….I felt that it is a good way to make the class interesting. Instead of conducting a lecture by using a textbook, this way of conducting class is more interesting. As a student, I honestly think that this way of learning is more beneficial since I can remember what I learn better than listening to the lecturer talk all the time…”

*(Reflection Student F)*

Student D liked the idea of using videos in the classroom as it is relevant, interesting and “new”.

> “....In my opinion, watching video is one of the best tools that can bring relevant materials to the class and make it more interesting. Moreover, as students I like to learn something new without feeling that they are being taught in the same way as lecture might....”

*(Reflection Student D)*

Similarly, Student B explained that he learned better because he could visualize the content.

> “…… I am in the opinion that video as a means of delivering lecture is very effective because I am such a person who learns quickly through what I see. It also makes me not able to forget what I have learned and consequently makes me a better person....”

*(Reflection Student B)*

2. **Attract students’ attention**
Student E explained that not only videos attracted their attention, but they were found to be beneficial to their learning as they learned with a purpose when the lecturer asked them to focus on specific information. Eventually, they learned taking notes while viewing.

“….. Showing video in class can attract the students’ attention and if the teacher says that she is going to ask students questions after having watched the video, it will definitely make the students concentrate and listen carefully so that they are able to answer the lecturer’s questions. Students may also jot down what they have gotten from the video…..”

(Reflection Student E)

In addition, Student E claimed that video viewing even helped the lazy students to learn and to focus on the lesson.

“…..The lecturer should show videos for each topic of the subject so that even the lazy students will get something…”

(Reflection Student E)

3. Enhance problem solving and critical thinking skills

In relation to problem solving and critical thinking skills, the students admitted that this technique was useful as they were provided with opportunities to practice solving problems in the given tasks. This enabled them to use their critical thinking skills in solving complex problems.

“….. this indicator that madam used is very useful to sharpen our problem solving skill. Task given by madam based on the video has shown us how to think creatively to solve and complete the task. When madam asked us to participate in these sessions, we are provided with the opportunity to practice and hone our problem solving skills. The more we practice solving these complex problems, the better we will become at critical thinking…..”

(Reflection Student A)

Student F also reported that they were rarely given opportunities to think in other classes.

“…..We are required to think which is rarely happening in the university when the class is conducted. Compared to other classes, which the students are being fed, this class is much better…..”

(Reflection Student F)

4. Prepare for real-life setting (workplace)

Apart from that, students reported that YouTube videos used in this study enhanced their knowledge on the real-life setting. It helped them to see beyond the classroom context and this would eventually prepare them for their future career whereby they learned about the employers’ expectations during the recruitment process. Student A for example explained that he gained new knowledge about the do’s and don’ts of an interview.

“…..Besides we will get more information and new knowledge through video that madam showed. For instance video that guide us what do’s and don’ts when interview session is very useful to us for future benefit especially when we face a real interview with huge company…..”

(Reflection Student A)

5. Create opportunity for collaborative work-Increases student engagement
Another benefit of using YouTube videos is that it can foster collaborative work among the students. Student B mentioned that the team members worked together to solve a problem. By doing this, they became more engaged and created synergy of ideas and started to share the information with the other team members. Eventually they created greater autonomy and fostered better relationships with one another.

“….Also, working in teams or groups makes session interaction, reduces boredom, increases outputs and efficiency, provides opportunity for having synergy of ideas, fosters greater cooperation among members, greater autonomy, gaining knowledge and sharing of information. All these were experienced by almost all the students present in the session. Finally I am in the opinion that video usage and working in teams should be employed as a viable means of delivering lectures...”

(Reflection Student B)

Similarly, Student C reported that through group collaboration and presentations, not only they learned from others’ presentations, but they also managed to give constructive criticism and feedback to their friends.

“….Interactive learning is learning that not only listened. However we can respond with constructive criticism and suggestions. This is fun for me because we can learn by looking at real examples that do by brother Iqbal, Zian, Rendy and Raji. And when they make mistake when practice interviews, it became an expensive lesson that I can receive. And this will be the subject will always be in my mind....”

(Reflection Student C)

Our study revealed the positive effects of using YouTube and interactive activities. Most of the students reported in their reflections that YouTube Videos were stimulating, relevant and managed to attract their attention. Our findings resonate with earlier studies (Agazio & Buckley, 2009; Clifton & Mann, 2011; Kelsen, 2009; Skiba, 2007) which claimed that YouTube Videos made the lesson more exciting and stimulating. We also discovered that one of the most apparent changes in the behaviour of the students was on their interactive behaviour. They seemed to display greater tendency to interact with the instructor as time goes by when week after week of class meetings were supported by the use of videos and interactive activities. Students were found to be more expressive and their attention span tended to be longer. All these findings are in line with studies conducted by Fralinger and Owens (2009) and Clifton and Mann (2011) who discovered that YouTube Videos increased student engagement, critical awareness and deep learning. Most importantly it enhanced their critical thinking and problem solving skills as they worked collaboratively to solve the problem (Taylor & Parsons, 2011). We have also found that students tended to be critical in their evaluations towards various issues and they asked more questions that reflected on why and how things were done and should have been done. We feel that learning activities that took into considerations elements like interactive, self-motivated, creative and involvement would certainly help in the learning process. Hence, our research has provided evidence that interactive, self-motivated and quality media such as video can be effective in enhancing teaching and learning experience. This is because through interactive activities and videos, learners are able to control their pace of learning and video has its own sets of attractions like sound, colours and graphics which will enrich the process of learning and caters to different type of learning styles regardless of whether they are kinesthetic, visual or auditory learners (Vural, 2013).
8. Conclusion and Future Recommendation

Our study provides evidence that the use of video and interactive activities can help to stimulate interactions and critical thinking among the students at the tertiary level. This study also found students to have a positive view towards the use of videos and interactive activities as the teaching tools since these tools are considered as able to sustain and generate further interest in the topic of discussion. Additionally, this study also revealed that when teaching tools such as video and interactive activities being applied during the lesson, students became more responsive towards the instructor and developed confidence while the discussion was held. Interestingly, this study has found that students at the tertiary level preferred to have their classes conducted with their involvement being the major part of the teaching and learning process. Thus, this study has garnered further support that the student-centered learning approach needs to be considered as a major stream in carrying out the teaching and learning at the tertiary level. Perhaps there should be a paradigm shift among instructors of higher education to move from the teacher-centered approach to the student-centered approach to teaching and learning given the vast benefits of the latter approach. Furthermore, this study had also found that when students were more involved in the learning process, they were able to remember better. This is evidenced when they were able to apply their knowledge in solving the problems or in generating ideas during their discussion based on the facts and figures obtained from the videos.

Although this study has illuminated the importance of the use of video and interactive activities in class, it also has its limitations. One of them is the duration whereby it was conducted in the span of 14 weeks with one and a half hour session for each cycle. As such there were only three cycles conducted, opportunity for greater exploration on the behavior of the students may not be sufficiently carried out, thus may affect the richness of the action research held. Given that this study was only conducted on one course of the business program, additional evidence on the effectiveness of using videos and interactive activities in stimulating the critical thinking on other courses may need to be gathered further in order to provide more concrete evidence of the approach. As such, similar study should be conducted on students of different classes in the future in order to find out whether the use of videos and interactive activities can also generate similar outcome. Other than that it would also be useful to carry out an investigation to identify whether there is a difference in the performance of students in terms of the examination results among the students which have been taught using the video and interactive activities versus those that were taught using the traditional teacher-centred approach.

References


