

Assessing the Use of YouTube Videos and Interactive Activities as a Critical Thinking Stimulator for Tertiary Students: An Action Research

Sethela June¹, Aizan Yaacob² & Yeoh Khar Kheng¹

¹ School of Business Management, Universiti Utara Malaysia, Sintok, Kedah, Malaysia

² School of Education and Modern Languages, Universiti Utara Malaysia, Sintok, Kedah, Malaysia

Correspondence: Sethela June, School of Business Management, College of Business, Universiti Utara Malaysia, Sintok, Kedah, Malaysia. Tel: 60-04-9284-7531. E-mail: sethela@uum.edu.my, sethelajune@yahoo.com

Received: May 5, 2014 Accepted: June 6, 2014 Online Published: July 27, 2014

doi:10.5539/ies.v7n8p56

URL: <http://dx.doi.org/10.5539/ies.v7n8p56>

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 who participated in this study which lasted for one semester. Data was collected using a few approaches which included video recording of the lessons, students' and researcher's reflections and role play. 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.

Keywords: critical thinking, tertiary education, YouTube, action research, constructivism

1. Introduction

The importance of critical thinking has received the attention of many parties in Malaysia ranging from educators to future employers (Ismail, 2011; Shah, 2011; Eldy & Sulaiman, 2013). 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 present education system (Othman, 1994; Baharun, 1998).

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) (Malaysia Education Blueprint, 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 (Malaysia Education

Blueprint, 2012). In addition, 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. The traditional approach of spoon-feeding and drilling the students in preparing them for the examination may have resulted in over dependency on the teachers and thus creating a group of graduates that may not be resourceful in their quest for knowledge. Employers have been skeptical about the abilities of young Malaysian graduates whom often been criticized for lack in critical thinking ability. In addition, students have doubted their ability with regards to critical thinking (Shah, 2011).

2. Literature Review

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). It was 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.

2.1 Technology in Education

Given the availability of the Internet, teachers are now having greater opportunity to access into various educational tools which can be used to enhance the practice of student-centered learning in the classroom and to engage in a lot of interactions with students. The readiness of online materials ranging from videos, slides, games, interactive software and many more are found to assist teachers in carrying out their teaching and learning (Keengwe, Onchwari, & Onchwari, 2009). Teachers would have to accept that with the development of social media and educational technologies, content knowledge can be generated and disseminated more quickly and widely than before.

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 (Clifton & Mann, 2011; Agazio & Buckley, 2009; 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 graduates 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 on 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 (Chee, 1995; Casey, 1996). The importance of 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 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.

In this study, we explored the use of YouTube videos supported by interactive activities in an attempt to stimulate critical thinking awareness of the students using an action research approach. The interest to assess the effectiveness of using YouTube videos has been prompted given the abundance of such materials from the various sites in the Internet.

2.2 Research Questions

Given the above, the following research questions guided this study:

- a. What are the perceptions of the students towards the use of YouTube videos supported by interactive activities in stimulating their critical thinking skills?
- b. To what extent did the use of YouTube videos supported by interactive activities stimulate the critical thinking ability of the students at the tertiary level?

3. 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.

3.1 Constructivism

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). In constructivism theory of learning, a teacher must develop understanding of what learners has brought to a learning situation (in this context to the classroom during lecture) and the task of the teacher is to help students to develop new knowledge. Hence constructivism started when thorough analysis is carried out on learners and teachers will have to develop appropriate tasks to promote constructivist learning (Boethel & Dimock, 2000). This approach again reflects the basic nature of constructivism which is centred towards the students for learning to take place.

This method uses engaging instruction to provoke higher order thinking, which facilitates knowledge construction. 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 which is based on the constructivism perspective will allow the learners to be engaged and this can motivates learning as compared to passive learning approach (Leidner & Jarvenpaa, 1995). The constructivists learning theory suggested that the process of learning is more important than finding a correct answer to a problem. As such, the role of the teachers is to assist the learners to develop their own understanding on the issue presented rather than spoon feeding the knowledge through lectures. Consequently, the use of teaching materials such as videos, graphics, pictures and other media are seen as necessary so that learners would be able to realize and discover things by themselves (Vural, 2013).

3.2 Cognitive Information Processing Theory

In relation to the constructivism theory, the cognitive information process theory 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 when information are received, it will be organized in group 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). The cognitive information process theory assumed learners have different learning styles. The theory suggested learning will be effective if instruction method is done based on learners' learning style (Bovy, 1981). Besides that when learners have prior knowledge about the subject, process of learning will be effective as such, when instructional support exist, learner will be able to obtain any missed knowledge from the existing knowledge that they suppose to gain (Bovy, 1981). In addition, since learners may have limited mental capacity, it is important that instructional method used is able to capture the attention of the learners to improve learning because the human memory will remember knowledge that has captured their selective attention (Bruning, 1983).

4. 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 (awareness). 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 learning. 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).

Based on Lewin's (1946) model, an action research can be carried out using the spiral approach which involves planning, fact-finding (or reconnaissance) and execution which later came generally to be understood as an action-reflection cycle of planning, acting, observing and reflecting (Figure 1).

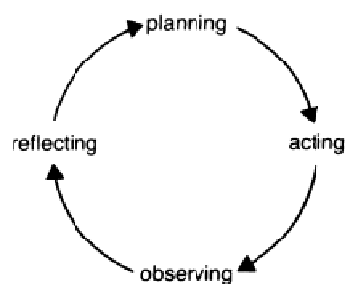


Figure 1. Lewin's action research model

Similarly McNiff, Lomax and Whitehead (1996), suggest that an action research contains several steps:

- *Review the current practice,*
- *Identify an aspect we want to improve,*
- *Imagine a way forward,*
- *Try it out, and take stock of what happens.*
- *Modify our plan in the light of what we have found and continue with the “action”,*
- *Evaluate the modified action,*
- *And so on until we are satisfied with that aspect of our work.*

As such, in a four-stage AR model, researcher(s) may go through several cycles until satisfaction is achieved (McNiff & Whitehead, 2002). In the instance of this research, it can be explained as below.

1st Cycle:

Planning

I need to make the participants become more engaged in their learning and develop critical thinking. In the first round of the research I plan to use videos relevant to the topic of discussion (Job Analysis) and draw up an activity is related to the video and the topic and presented them to the participants.

Acting

I carry out the activity in the class. Students were first briefed about the activities and the plan of the day.

Observing

I discuss with the students about the activity and lesson that has been conducted. The students seem to be quite confused with the first session, especially in terms of the given instructions. Nevertheless, from the observation during the class, it can be seen that participants seem to be interested in the approach and most of the participants were actively involved though some seem to be oblivious about what was going on.

Reflecting

Is the session very confusing? What went right? What went wrong? Have I overlooked the needs of the participants to ask questions about the activities before it was conducted?

Thus, there is a need for the researcher to re-look at the first round of the research as described above, so that the next cycle can be more successful (McNiff & Whitehead, 2002). Consequently, the researcher will go on to the next cycle of re-planning, acting, observing and reflecting as shown in Figure 2 below. Based on Figure 2, the researcher will continue to look for improvement by modifying the original plan in view of the newly found knowledge and continue with the action. This will then be followed by the evaluation of the modified action until the researcher is satisfied with the aspect of his work.

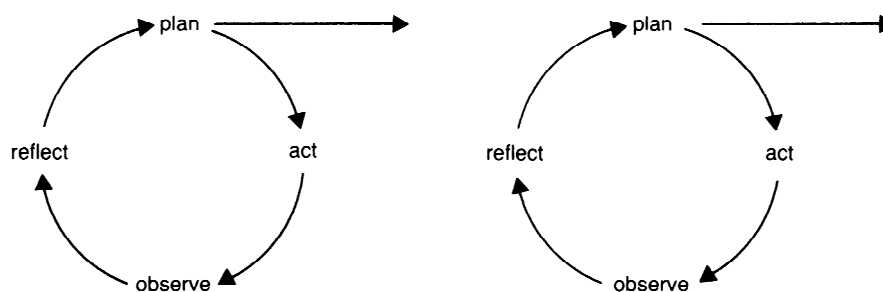


Figure 2. The action-reflection cycles sequence

The AR adopted in this study is a small scale research which took place among 50 undergraduate students for one semester with an intention to start researching into their 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 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. 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. As suggested by Hair, Black, Babin, Anderson, and Tatham (2006) it is important to consider research ethicality and in no way a research should be carried out through coercion and be harmful to the participants while at the same time participants have all the right to privacy and be informed of the nature of the research.

4.1 Data Collection Procedure and Analysis

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. 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. We reported 2 sets of findings in this study which were from the perspective of the researchers and from the students. All the data from the students were recorded, transcribed verbatim and analyzed using emergent coding.

5. Results

5.1 Background of Respondents

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.

Table 1. Number of respondents based on gender

No	Gender	Frequency	Percentage (%)	Cumulative Percentage
1	Male	25	50.0	50.0
2	Female	25	50.0	
	Total	50	100.0	100

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

No	Nationality	Frequency	Percentage (%)	Cumulative Percentage
1	Nigeria	3	6.0	6.0
2	Thailand	3	6.0	12.0
3	Malaysian	27	54.0	66.0
4	Pakistan	1	2.0	68.0
5	Uzbekistan	1	2.0	70.0
6	Brunei	1	2.0	72.0
7	Somalia	1	2.0	74.0
8	Indonesia	13	26.0	100.0
	Total	50	100.0	

5.2 Researchers Perspectives

RQ1: What are the perceptions of the students towards the use of YouTube videos supported by interactive activities in stimulating their critical thinking skills?

The researcher found that the use of YouTube videos which were supported by interactive activities can have effect on the stimulation of critical thinking. This action research was able to provide evidence that throughout the three sets of cycles, it was found that learners tend to actively involved and engaged in the sessions held. Evidences from the recorded video production and the strong participation shown during the session clearly showed that students were able to participate actively and demonstrated strong interest in the learning process when video and supporting activities were used throughout the session. Researchers found that students were critical and able to provide constructive comments in each session held. Thus, it was found that the use of YouTube videos and interactive activities can somewhat induce the formation of critical thinking abilities among the students. This was an evidence of the ability of the students to generate ideas in solving an issue and they were able to present and justify their ideas during presentation and class discussions.

RQ2: To what extent did the use of YouTube videos supported by interactive activities stimulate the critical thinking ability of the students at the tertiary level?

The researcher also felt that participants had positive views towards the use of video with support classroom activities as a good tool to enhance their understanding of concepts while being able to sustain their attention throughout the teaching and learning session. Many of the learners mentioned that they hope more lectures will be conducted in the same manner as they felt that incorporating technologies into learning is something very exciting and can reduce the element of boredom while enhancing understanding. Students expressed their opinion that by watching videos in the classroom, they were able to understand lectures better since they could visualize the content and relate them to real workplace. This could be seen from the following remarks made by a sample of students/participants.

5.3 Students Perspectives

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.

5.3.1 YouTube Makes the Lesson Fun and Interesting: Beneficial–Remember Better-Effective-Visual

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)

5.3.2 YouTube Videos 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)

5.3.3 Enhances 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)

5.3.4 Prepares 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)

5.3.5 Creates 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)

6. Discussion and Implications

The study set out to examine the use of YouTube videos and interactive activities in stimulating students' critical thinking skills using an Action research approach. 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 (Clifton & Mann, 2011; Agazio & Buckley, 2009; Skiba, 2007; Kelsen, 2009) 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 & Parson, 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, colors 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).

Our findings imply that teaching using the traditional approach of teacher-centered and one way lecture format may not be an effective technique of teaching. Teachers need to consider designing and presenting instructional video so that higher amount of interaction and learning achievement can be established. Evidence from this action research has demonstrated students' preference towards the usage of video as part of the learning tool. This study also implies that interactions and critical thinking may not be effectively developed by merely using or showing videos in class. It should be accompanied by various types of interactive activities such as involving the students in the video production of what they have learned such as recorded a role play or requesting them to engage in various buzz group and presentation activities. This approach is strongly supported by the constructivist approach to learning which suggests that when students actively participated in the learning activities, they will get engaged and thus, developed the motivation to learn further. In other words, teaching with the constructivism approach in mind will lead to better learning experience since learning is supported by past knowledge (Leidner & Jarvenpaa, 1995). The comments gained from the reflective activities by the students have also shown that the use of video and interactive activities can develop greater motivation and engagement, which encouraged them to attend classes and sustained their interest to learn (Vural & Zellner, 2010).

7. Conclusions

This action research 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. In addition, this study also revealed that when teaching tools such as video and interactive activities are being applied during the lesson, students became more responsive towards the instructor and developed confidence while the discussion was being 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-centered approach.

References

- Agazio, J., & Buckley, K. (2009). An Untapped Resource: Using YouTube in Nursing Education. *Nursing Education, 34* (1), 23-28. <http://dx.doi.org/10.1097/01.NNE.0000343403.13234.a2>
- Agyris C., Putnam R., & Smith, D. (1985). *Action science*. Jossey-Bass Inc., New York
- Atkinson, N. L., Billing, A. S., Desmond, S. M., Gold, R. S., & Tournas-Hardt, A. (2007). Assessment of the nutrition and physical activity education needs of low-income, rural mothers: Can technology play a role? *Journal of Community Health, 32*, 245-267. <http://dx.doi.org/10.1007/s10900-007-9047-7>
- Baharun, K. (1998). *Critical thinking skills, dispositions and classroom practices of history teachers in malaysia secondary schools* (Unpublished Ph.D. Thesis). University of Manchester, U.K.
- Beothel, M., & Dimock, K. V. (2000). *Constructing knowledge with technology*. Austin, TX: Southwest Educational Development Laboratory.
- Bigge, M. L., & Shermis, S. S. (1992). *Learning theories for teachers* (5th ed.). New York: Harper Collins.
- Boghossian, P. (2006). Behaviorism, constructivism, and socratic pedagogy. *Educational Philosophy & Theory, 38*(6), 713-722. <http://dx.doi.org/10.1111/j.1469-5812.2006.00226.x>
- Boud, D., & Feletti, G. W. E. (1991). *The challenge of problem-based learning*. London: Kogan Page.
- Bovy, R. C. (1981). Successful Instructional Methods: A Cognitive Information Processing Approach. *ECTJ, 29*(4), 203-217.
- Brubacher, J. W., Case, C. W., & Reagan, T. G. (1994). *Becoming a reflective educator: How to build a culture of inquiry in the schools*. Thousand Oaks, Calif.: Corwin Press.
- Bruning, I. L. (1983). An information processing approach to a theory of instruction. *ECTJ, 31*(2), 91-101.
- Casey, C. (1996). Incorporating cognitive apprenticeship in multi-media. *Educational Technology, Research and Development, 44*, 74-84. <http://dx.doi.org/10.1007/BF02300327>
- Chang, C. (2004). Constructing a streaming video-based learning forum for collaborative learning. *Journal of*

- Educational Multimedia and Hypermedia*, 13(3), 245-263.
- Chee, Y. C. (1995). Cognitive apprenticeship and its application to the teaching of Smalltalk in a multimedia interactive learning environment. *Instructional Science*, 23,133-161. <http://dx.doi.org/10.1007/BF00890449>
- Clifton, A., & Mann, C. (2011). Can YouTube enhance student nurse learning? *Nurse Education Today*, 31(4), 311-313. <http://dx.doi.org/10.1016/j.nedt.2010.10.004>
- Delisle, R. (1997). *How to use problem-based learning in the classroom*. Association for Supervision and Curriculum Development. Alexandria, VA, USA.
- Den Brok, P, Fisher, D., & Koul, R. (2005). The importance of teacher interpersonal behavior for secondary science students' attitudes in Kashmir. *Journal of Classroom Interaction*, 40(2), 5-19.
- Dewey, J. (1910). *How we think*. Boston: D.C.: Heath & Co.
- Dewey, J. (1916). *Democracy and Education. An introduction to the philosophy of education* (1966 edition). New York: Free Press.
- Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. New York: D.C. Heath and Company.
- Dewey, J. (1944). *Democracy and education: An introduction to the Philosophy of education*. New York: The Free Press.
- Eldy, E. F., & Sulaiman, F. (2013). Integrated PBL Approach: Preliminary Findings towards Physics Students' Critical Thinking and Creative-Critical Thinking. *International Journal of Humanities and Social Science Invention*, 2(3), 18-25.
- Fralinger, B., & Owens, R. (2009). YouTube As A Learning Tool. *Journal of College Teaching & Learning*, 6(8), 15-28.
- Friedman, V. J. (2001). Action science: Creating communities of inquiry in communities of practice. In P. Reason, & H. Bradburyn (Eds.), *Handbook of action research*. Sage, New York.
- Friere, P. (1970). *Pedagogy of the oppressed*. Continuum, New York
- Furco, A. (1996). *Expanding boundaries: Serving and learning*. Florida Campus Compact.
- Gardiner, H., & Kosmitzki, C. (2008). *Lives across cultures: Cross-cultural human development*. Boston: Allyn and Bacon.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). New Jersey: Prentice Hall.
- Halx, M. D., & Reynold, L. E. (2006). A pedagogy of force: Faculty perspectives of critical thinking capacity in undergraduate students. *The Journal of General Education*, 54(4), 293-315. <http://dx.doi.org/10.1353/jge.2006.0009>
- Ismail, N. A. (2011). Graduates' characteristics and unemployment: A study among malaysian graduates. *International journal of business and social science*, 2(16), 94-102.
- Jaipal, K., & Figg, C. (2010). Unpacking the "total pACKage": Emergent TPACK characteristics from a study of preservice teachers teaching with technology. *Journal of Technology & Teacher Education*, 18(3), 415-441.
- Keengwe, J., Onchwari, G., & Onchwari, J. (2009). Technology and student learning: Towards a learner-centered teaching model. *AAACE Journal*, 17(1), 11-22.
- Kelsen, B. (2009). Teaching EFL to the iGeneration: A Survey of Using YouTube as Supplementary Material with College EFL Students in Taiwan. *CALL-EJ*, 10(2). Retrieved April 20, 2014, from <http://caliej.org/journal/10-2/kelsen.html>
- Kudryavtsev, A., Krasny, M., Ferenz, G., & Babcock, L. (2007). Use of computer technologies by educators in urban consumer science education programs. *Journal of Extension [On-line]*, 45(5), Article 5FEA2. Retrieved from <http://www.joe.org/joe/2007october/a2.php>
- Lemke, J. L. (2001). Articulating communities: Sociocultural perspective on science education. *Journal of Research in Science Teaching*, 38(3), 296-316. [http://dx.doi.org/10.1002/1098-2736\(200103\)38:3<296::AID-TEA1007>3.0.CO;2-R](http://dx.doi.org/10.1002/1098-2736(200103)38:3<296::AID-TEA1007>3.0.CO;2-R)
- Leidner, D. E., & Jarvenpaa, S. (1995). The use of information technology to enhance management school education: A theoretical view. *MIS Quarterly*, 19(3), 265-291. <http://dx.doi.org/10.2307/249596>

- Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues*, 2(4), 34-46. <http://dx.doi.org/10.1111/j.1540-4560.1946.tb02295.x>
- Marchionini, G. (2003). Video and learning redux: New capabilities for practical use. *Educational Technology*, 43(2), 36-41.
- Malaysia Education Blueprint. (2012). *Malaysia Education Blueprint 2013-2025*. Retrieved May 5, 2014, from <http://www.moe.gov.my/userfiles/file/PPP/Preliminary-Blueprint-Eng.pdf>
- McNiff, J., Lomax, P., & Whitehead, J. (1996). *You and your action research project*. London, Routledge.
- McNiff, J., & Whitehead, J. (2002). *Action research in organisations*. London, Routledge.
- Norton, J. (1994). *Creative thinking and locus of control as predictors of reflective thinking in preservice teachers* (ERIC Document Reproduction No. ED 366 579).
- Ormrod, J. E. (2004). *Human learning*. Upper Saddle River, NJ: Pearson Education, Inc
- Othman, A. (1994). *Critical thinking skills across the curriculum. A survey of the teachers' knowledge, skills and attitudes in secondary schools in Kuching, Sarawak* (Unpublished master thesis). University of Houston, Texas.
- Pianta, R. C. (1999). *Enhancing relationships: Between children and teachers*. Washington, DC: American Psychological Association.
- Reiser, R. A., & Dempsey, J. V. (2007). *Trends and issues in instructional design* (2nd ed.). Upper Saddle River, NJ: Pearson Education, Inc.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. London: Temple Smith.
- Shah, N. Z. (2011). *Critical Thinking and Employability of Computer-related Graduates: The Malaysian Context* (Unpublished Ph.D. thesis). Dublin City University, Ireland.
- Sierpinska, A., & Lerman. (1996). Epistemologies of mathematics and of mathematics education. In A. J. Bishop, K. Clements, C. Keitel, J. Kilpatrick, & C. Larborde (Eds.), *International handbook of mathematics education*. Dordrecht: Kluwer.
- Skiba, D. J. (2007). Nursing Education 2.0: YouTube. *Nursing Education Perspectives*, 28(2), 100-102.
- Spence, L. (2004). The usual doesn't work: Why we need problem-based learning. *Portal: Libraries and the Academy*, 4(4), 485-493. <http://dx.doi.org/10.1353/pla.2004.0072>
- Taylor, L., & Parsons, J. (2011). Improving Student Engagement. *Current Issues in Education*, 14(1). Retrieved April 20, 2014, from <http://cie.asu.edu/>
- The Star. (2012). *Education system not producing thinking graduates, say expert*. Retrieved November 17, 2013, from <http://www.thestar.com.my/News/Nation/2012/03/04/Education-system-not-producing-thinking-graduates-say-experts.aspx>
- Van den Oord, E. J., & Van Rossem, R. (2002). Differences in first graders' school adjustment: The role of classroom characteristics and social structure of the group. *Journal of School Psychology*, 40(5), 369-394. [http://dx.doi.org/10.1016/S0022-4405\(02\)00109-7](http://dx.doi.org/10.1016/S0022-4405(02)00109-7)
- Vural, Ö. F. (2013). The Impact of a Question-Embedded Video-based Learning Tool on E-learning. *Educational Sciences: Theory & Practice*, 13(2), 1315-1323.
- Vural, O. F., & Zellner, R. (2010). Using concept mapping in video-based learning. *Gaziantep University Social Science Journal*, 9(3), 747-757.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).