CONCEPTUAL FRAMEWORK OF VIDEO LEARNING PRACTICES TO ENHANCE STUDENTS CRITICAL THINKING SKILLS IN ACTIVE LEARNING ENVIRONMENT

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1.1 INTRODUCTION

An educational institution of the 21st century are facing with many challenges in improving student performance to encounter the new upcoming challenge for the young generation (Mercer, 2007). With the big task to handle, educational institutions must ensure the quality of education provided for students in all level, in line with the hope from each parents towards their children's future.

Thus, educators cannot simply rely on traditional teaching methods to prepare the students for future job environment. Instead, more innovative methods in teaching and learning such as video, animation, simulation and others should be identified according with the

requirements of environment in this era of technology (Balasubramanian, Wilson, & Cios, 2006). As state by Simpson (2005), today children consistently play video and computer games, watch music television (MTV), keep using instant message and watch action movies. The actions on taking out of this familiar environment may impact their motivation and attention. This is because young generation nowadays demanding a new ethic or methods in teaching and learning so that the process can grab their attention to be more collaborative, global and comprehensive in the knowledge itself (Brownell, Adams, Sindelar, & Waldron, 2006).

As state by Zamfir, (2008) by using computer application in education in scope of video player can gain positive impacts in the learning process. Students' motivation can be increase with the use of computer applications. This is because the methods are able to catch the attention of the students and increase their interest for learning. Other than that, it is also can lead towards the development of students' skills, develops the students' process of thinking critically and can create the opportunity for students to be active in class. Moreover, this approach also can contribute to the students' engagement in the process of learning which at the same time can provide the soft skills needed for the future especially in critical thinking aspects. This is because, the computer application itself focuses on the video can provide different atmosphere in learning process because the developers can implement many concepts or elements in the video suit with the scope or the subject provided thus may attracts the students' attention.

1.3 VIDEO AND ANIMATION

Video is not the new teaching tools in education areas. Many

researchers have clarifying the benefit of the uses of video in learning process. Although the use of learning videos has been widely employed in the past years, recently the interest has been incrementally increased. Millions of learners watch videos from different platforms (eg, YouTube, Vimeo, Khan Academy, BLOSSOMS etc) on a diverse number of terminals (desktop, phone, tablet). Students access academic content via digital libraries, discussions with tutors by email and online courses from their homes (Giannakos, 2013). With respect to subject area, Giannakos, (2013) explain in his finding that the language domain is dominant in video-based learning research. However, interest in the domains of information and communication technology (ICT) increased in the second period (2007 – 2012) under his investigation. This is expected as there are a lot of researches found the benefit of video in learning including providing students with source of information (PekdaĞ, 2010), bring into language learning the real life & real interlocutors (Can, 2006), enhance towards productions into the collaborative learning environment (Roberts, 2004) and students describing video based learning as useful, helpful and effective, as well as enjoyable, motivating, and stimulating (Kay, 2012).

Wachob (2011) found that using videos would be able to enhance students' critical thinking skills. She indicates that activities using videos based on technology, can integrate skills such as: reflection, evaluation, critique, listening, speaking and writing. These critical skills, along with higher levels of motivation, are prerequisites to learner autonomy. Some considerations about how to prepare students before, during and after videotaping as well as some hints on how to videotape are also included. Technology is not a substitute for teaching, nor does it stand alone as a technique, but when integrated into other classroom practices can help promote learner autonomy.

1.4 CRITICAL THINKING

In 2006, there were estimated 60,000 unemployed local graduates in Malaysia (NST, 2006). This issue has grab attention by many parties to take an action to overcome the issue, and it is also shows how serious this issue was. Even though they had many interviewed, work experienced and attending some retraining programs, it is still difficult to find jobs. Thus, the research had been conducted to investigate the causes of the situation. Based from the research, there are growing demands for graduates to be equipped with more than just an academic degree which required other skills also.

One of the major causes identified is the lack of soft skills among graduates, which makes them unable to compete in the current competitive job market. The focus on the areas of soft skills, which seem to be lacking include critical thinking, communications, presentations, leadership, teamwork, interpersonal skills, management skills, time management and problem solving skills (Aminuddin Baki et al., 2008).

As state by Baki et al., (2007), critical thinking skills is very important to survive in the industry field in order to able to process the straightforward information accurately, works to meet targets in an organized and consistent manner, focuses on task and makes an effort to avoid inefficiency. Other than that, the skills also help in recognizes what needs to be done and shows initiative in straightforward day to day situations, anticipates and prepares for future opportunities, rigorously analysis problems and implements the solutions. That why the skills are really important for graduate students in order to survive in the industry field.

Critical thinking is about how the people approaching the problems, questions and issues. It is the best way to know of to get to the truth.

Although many people once believed that we are born either with or without creative and critical thinking abilities, research has shown that these skills are teachable and learnable (Cotton, 1991).

Based on meta-analysis on 117 research about critical thinking, there are 5 basic method to measure critical thinking (Abrami et al., 2008), such as:

i.   Standardized testing - The famous and popular critical thinking appraisal in measuring the critical thinking for example The California Critical Thinking Skills Test (CCTST), Watson Glaser Critical Thinking Appraisal (WGCTA), Cornell Critical Thinking Test, Level Z **(**CCTT).

ii.   Test and evaluation conducted by researchers – This method are focussing more towards content analysis, interview analysis and open ended questions to see the development of critical thinking skills.

iii. Tests developed by more than one researcher–It is not standardized method in measuring students' critical thinkingfor example in research Bonk, Angeli, Malikowski, & Supplee (2001).

iv.   The test was developed by a researcher –The researcher are involved in teaching certain courses thus at the same time they develop the test.

v.   The second source of measurement – The instrument is taken from others reference either the researcher translate the test or just take the exactly same test based on research requirement.

There are a lot of critical thinking measurement has been developed by the others researcher.Table 1 showsmeta-analysis on standardized test of critical thinking.

Table 1 Meta-Analysis on standardized test of Critical Thinking

No.	Model	Source	User	Aim
1	Cornell	Ennis,	Grade 5	To test about experience

	Critical Thinking Test, Level X	Millman, & Tomko (2005)	until grade 12	
2	Cornell Critical Thinking Test, Level Z (CCTT)	Ennis, Millman, & Tomko (2005)	Grade 10 until grade 12	Predicts student's future performance in honor, in critical thinking classes, college admission and career situation
3	Watson Glaser Critical Thinking Appraisal (WGCTA)	Watson & Glaser (2002)	Tertiary and graduates students	Measure high level reasoning and critical thinking, Predicts judgment, problem solving and decision making, Classifies individual as low, average and high, Used by major corporations & consultants
4	The California Critical Thinking Dispositions Inventory (CCTDI)	Facione & Facione (1992)	General adult population	To measure the disposition to engage problems and make decisions using critical thinking.
5	The California Critical Thinking Skills Test: College Level (CCTST)	Facione (1990)	College students	To measures of participants' skills in six subscales (analysis, inference, explanation, interpretation, self-regulation

Based from the list of the test above, Watson Glaser Critical Thinking Appraisal (WGCTA) develop by Watson & Glaser (2002) seem like the most suitable test compare within others in measuring students' critical thinking skills to be used in this research. It is because WGCTA contains 5 sub scale element of inference, assumption, deduction, interpretation and evaluation of argument and divided into 5 parts respectively. Here, the researcher can evaluate and observe the development of each of the respondents based on their critical thinking skills parts by part based on WGCTA elements.

1.2 BLOSSOMS

Blended Learning Open Source Science or Math Studies (BLOSSOMS) is known as a shared teaching of a "Teaching Duet".

There is a "guest teacher" on the video; each film is designed to be watched in short, five-minute segments, allowing the in-class teacher to ask his or her students questions and run through various exercises. After each exercise has been completed, teachers can turn the video back on and progress to another segment (R. C. Larson & Murray, 2008).

"BLOSSOMS interactive video learning modules" are partnering with educators of Jordan and Pakistan, faculty members, graduate students and high school teachers to create such a beautiful lesson. These developed video modules are not intended to replace existing curriculum content but rather to enhance development of critical thinking skills by the lively video presence of a gifted 'guest lecturer,' moving away from rote memorization and 'teaching to a test' (R. C. Larson & Murray, 2011).

Massachusetts Institute of Technology (MIT) state that BLOSSOMS videos have enriching student's learning experiences in high school classrooms from Brooklyn to Beirut to Bangalore. Video Library in MIT contains over 50 math and science lessons, all freely available to teachers as streaming video and internet downloads and as DVDs and videotapes. Video Library is in the form of website are freely open accessed by all over the world to browse and download the lessons to be use in class anytime and anywhere. Every video lesson is a complete resource includes segments, a teacher's guide, handouts and a list of additional online resources relevant to the topic. BLOSSOMS video is create to make teaching and learning activities classroom become alive.

(Aris et al., 2013) claim that MIT BLOSSOMS video lessons are interactive in nature with planned activities and hands- on experience that engage students in critical thinking & problem solving. Some video lessons can also contribute to enriching higher education students'

entrepreneurial skills.

So, the purpose of this research is to determine whether the critical thinking among university students are improving by integrating BLOSSOMS video learning as a pedagogical tool in active learning environment. To accomplish the research object, the research will employs mixed pedagogical tools between current tools and video learning in selected subjects.

1.5 CONCEPTUAL FRAMEWORK

Below is the example of the conceptual framework of this plan research. To obtain the significant results, there will be 3 matters involve which is concepts, tools and the outcome. The concepts or elements used in this research are Bloom's Taxonomy of Higher Thinking and Critical Thinking Appraisal by Watson Glaser. Bloom's Taxonomy of Higher Thinking contains the elements of knowledge, comprehension, application, analysis, synthesis and evaluation(Bloom, 1956) that will be implement in the develop assessment questions. While, Critical Thinking Appraisal by Watson & Glaser, (2002)contains the element of inference, assumption, interpretation, deduction and argument. The element will be used to detect the level of respondent's critical thinking skills in the appraisal.

In the other scope, the video will be act as a tool. The video used contains the elements of critical thinking skills which can encourage students to think deeply, holistically and at the same time providing the real life demonstration method to explain the concept. In addition, the activities provided in the video contains task based learning concept which have more tendency to obtain or develop the soft skills among the students (Mohd Fairuz Iskandar et al., 2008) especially in leadership, teamwork and communication. Other than that, the video also contains the element of animation, which can ease the

problem of the complicated knowledge and can grab students' attention to make the video become more attractive and effective(Manal Abdullah & Aisha Ehsan, 2012).
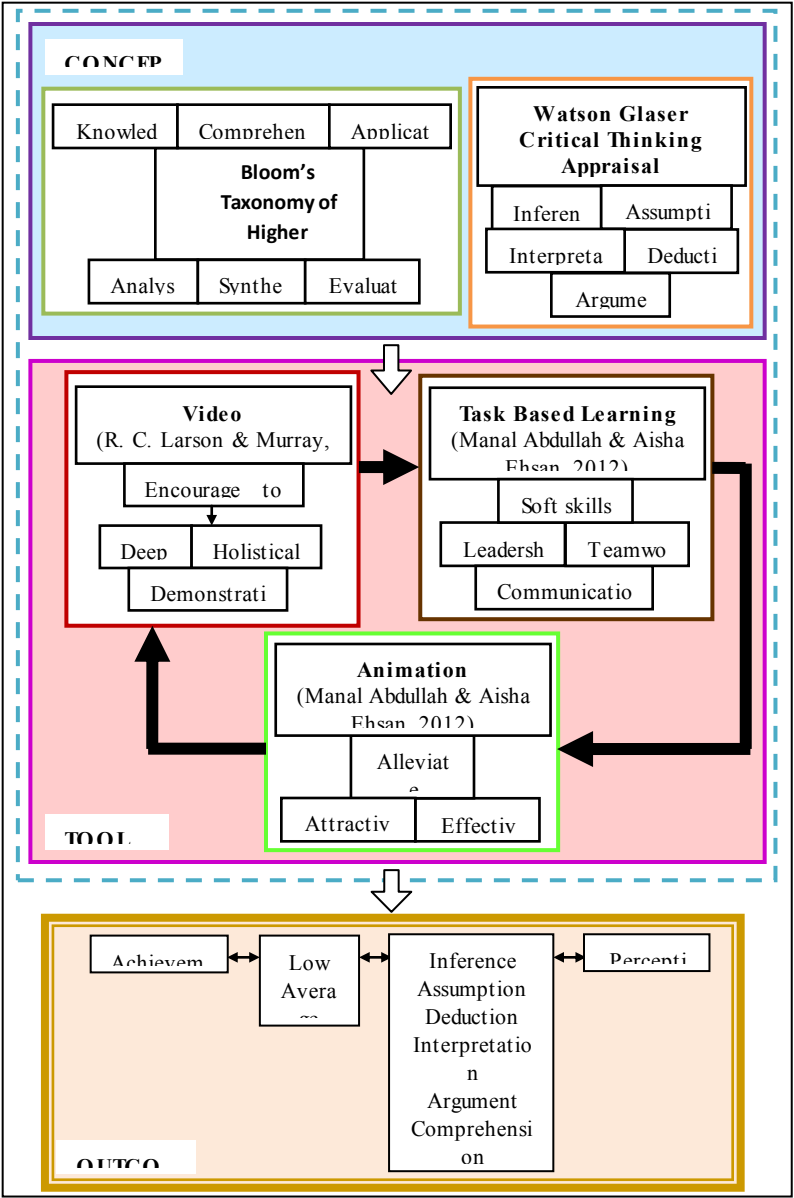
Figure 1 The proposed conceptual framework

1.6 METHODOLOGY PLANNED/USED

This research will use experimental research design method which is quasi experimental design. Both qualitative and quantitative data will be used in order to triangulate the results from the experiment. This research will involve three phases as followings:

Phase 1: Analysis Phase

This phase will cover the two types of tests pretest and posttest, which aimed to reflect user's understanding of the experiment topics. The pre and post-test instrument consists of questions related to the content in the learning video. The pre and post test questions contained 4 structured questions which reflect to the topic content and task based learning concept contained in the video.

Phase 2: Experimental Phase

In the experimental phase, the experimental group will be exposing towards BLOSSOMS video in the class while the control group will be expose with traditional teaching chalk and talk learning method. This is used to identify whether BLOSSOMS video did affect in students' critical thinking skills. The used video is a product of collaboration from Universiti Teknologi Malaysia with Massachusetts Institute of Technology (MIT). They had developed an educational

video under a project known as Blended Learning Open Source Science or Math Studies Initiative (BLOSSOMS). The video is aimed for the use of high school students as another alternative to the current material in teaching and learning process. Each BLOSSOMS video has a guideline for teachers to carry out classroom activities which could be downloaded for free from the MIT website, http://blossoms.mit.edu. Thus, one BLOSSOMS video by the title "Is There a Connection between Computer Network Topologies and a Malaysian Wedding?" was selected to be used during the experimental research study.

BLOSSOMS interactive video lessons, is the video that develop with the concept 'this will not be a lecture' instead it will be a 50 minute lesson divided into segments accompanied with 8 segments. Every segment contains their activities. Each preferably 3 and no more than 4 minutes long. The concept more towards doing a teaching duet with the regular in-class teacher, in front of that teacher regular class. It acts as the alternative way by replacing the verbal explanations with demonstrations. The video contains the narrator, actor and actress that doing the demonstration.

Phase 3: Data Collection Phase

In this phase, the post-test will be distributed among the respondents including control and experimental group. Then, the respondents in experimental group are required to answer the questionnaires that contain the perceptions toward BLOSSOMS video. The interview session then, will be conducted outside of the class within experimental group individually.

1.7 EXPECTED RESULT

The result for this research is including with expected of following:

- Level of students' achievement increasing after using video

> BLOSSOMS in learning process

- There are few elements of critical thinking abilities can be identify based from the assessment test
- The critical thinking abilities can be categorized under the element of Taxonomy Bloom.
- The framework for learning practices using BLOSSOMS

1.7 CONCLUSION

This research is planning in order to develop the blended learning environment among the student to create the active learning environment and encourage students to think critically.

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