Application of Cultural-Based Interactive Multimedia Teaching Materials Through Assure Development Model to Improve Critical Thinking Skills of Primary School Teacher Education Students

Ivayuni Listiani
University of PGRI Madiun
ivayuni@unipma.ac.id

Abstract
This study aims to determine the effectiveness of the application of cultural-based interactive multimedia teaching materials through ASSURE development model to improve critical thinking skills of primary school teacher education students. This research is a quasi-experimental research with quantitative approach. The research design was Posttest Only Control Group Design using culture-based interactive multimedia teaching materials in the experimental group and the lecture method varied in the control group. The research population is all students of 7th semester of Elementary School Teacher Education Study Program of Universitas PGRI Madiun academic year 2016/2017. The sampling technique used is cluster random sampling, so it is obtained semester 7 class B as experiment group and second semester of class D as control group. Data collection techniques use multiple choice tests and essays, observation sheets, and academic documents. Hypothesis test using t-test. The results of this study concluded that the application of cultural-based interactive multimedia teaching materials through ASSURE development model is effective in improving critical thinking skills of students of Elementary School Teacher Education PGRI Madiun University.

Keywords: Interactive Cultural Based Teaching Materials, ASSURE Development Model, Critical Thinking Skills.

Introduction
The development of science and technology of the end is growing rapidly. Along with the development of science and technology, every country is required to create qualified human resources, namely people who have the mental readiness and the ability to participate in developing science and technology so as to improve the quality of the nation itself. In Indonesia, economic increasingly widespread technology peralatan impact on information and communication technologies such as increasingly sophisticated mobile phones,
computers, and laptops are widely used by practitioners of education to support the implementation of learning. Penanfaatan equipment technology in learning as a tool in the manufacture of materials and instructional media. The tools in question can be either a computer or laptop, Internet network technologies of e-learning, and technology (Liquid Crystal Display) LCD Projector. Dacanay (2010) stated that the integration of ICT in education has been recognized as a powerful tool to improve learning. Nowadays there has been growing computer-aided instructional media almost in every subject. Computers have a role as a supporting medium or a supporter in the learning process.

Education is closely related to culture. Culture according to Edwar Burnet Tylor, (in Culture is a complex that includes knowledge, belief, morals, law, art, customs and habits gained by human beings as members of society.) The culture includes all that human beings get or learn as community members. In addition to interactive media used in culture-based delivery of learning can take place also vary the learning so that students can relate learning with real life.

According Sudjana & Rival (2001: 2) medium of instruction can enhance student learning in teaching which in turn is expected to enhance the learning outcomes achieved. This is supported by the benefits of teaching media in the learning process of students, among others: (1) Teaching will attract more students so that it can foster motivation to learn, (2) Teaching materials will be more clear meaning that will be better understood by the students and allow students to master goals better teaching, (3) teaching methods will be more varied, (4) Students do more learning activities because not only listening but also other activities such as observing, performing, demonstrating and others. One of them by using multimedia-based learning media that accompanied by animation.

Teknologi fully incorporate multimedia computer technology, the system of video and audio systems to get a better combination and increasing interaction between users with computers. Audio and visual presentation of multimedia learning makes visualization more interesting. Multimedia display will make students more freely choose, synthesize and elaborate knowledge who want to understand. Multimedia also provides opportunities for students to develop learning techniques to produce maximum results. Multimedia based learning is learning using multimedia tools as its main suggestion. In this case the computer is a major component in multimedia-based learning.
Sarana technology in Program Elementary School Teacher University PGRI Madiun own means which can be utilized right technology in learning. However, there are some maha students who do not pay attention in class learning when learning carried out discussions and presentations using powerpoint media, necessitating an attractive media for learning more leverage. It should be noted that learning becomes fun as stipulated in Government Regulation No. 32 of 2013 "a learning process in an organized education in an interactive, inspiring, fun, challenging, motivating participants didik to participate actively". Learning should be done by providing great learning experience to students directly through skill development and scientific attitude. It has the objective to make students understand the concepts, able to solve problems, and can develop their thinking skills. Problems that have wanted her to arouse curiosity by connecting in real life (Sonmez and Lee, 2003). Furthermore (Allen, D., 2006) states students in the group will practice problem solving through questions, and communication through their analysis. As the opinion of Daryanto (2012: 59) states that the aspect of effective learning is the improvement of knowledge, skills, attitude changes, behavior, adaptability, increased integrity, participation, and cultural interaction. The gap real condition with ideal conditions can affect the outcome of learning, motivation, and interest in learning is most students. One alternative means to maximize existing technology is a technology-based instructional media. This is in accordance with the opinion of Smaldino (2011:14) can suggested that students use technology and media to paint a mixed picture belaja m improvement quality. Based on the phenomenon that has presented required an innovation in thematic learning, especially inovasi i use multimedia learning media is interactive thematic referring to the curriculum in 2013.

According Vaughan, (2011:1) multimedia inte the reactive is a combination of digital manipulation (text, images, graphics, sound, video, and animation) and elements interaktif combined. Furthermore, Mishra (2005:3) expresses own interactive-related two way communication or more of the components of the communication. Another definition of interactive multimedia according Collins (1997: 3-4) that med it is used in a context that blends right pendidi videotapes, audio, and text associated with a technology such as CD ROM, CD-I (compact disc interactive) and World Wide web. Thematic interactive multimedia presence is expected to provide services mainly on student independence in learning, learning becomes fun and not monotonous because it combines elements of
the picture, sound, text, visual animation. As the results of Jusuf (2009: 73) suggests that the defense of multimedia-based distance learning is becoming more thematic fun, easy, and not boring so as to increase the interest and motivation of students in a thematic study. The advantages of interactive multimedia based on Dikshit research results (2013: 208) show that the use of interactive multimedia is more effective in learning than using printed books and through online web. Further in accordance with the results of research conducted by Arkun (2008: 16) resulted in the conclusion that multimedia products used in learning in grade IV elementary school have a positive impact on student achievement. The results of these studies can be used as a reference that need to be applied in the interactive multimedia learning is more effective for learning and student learning outcomes can be improved. The results revealed that multimedia can improve student learning outcomes as conducted by Lingin (2012: 28) showed that the learning outcomes of students who were taught by using interactive learning media (experimental class) higher = 33.02 of the learning outcomes of students who using textbook learning media (control class) = 31.11. The difference between the experimental class and the control class proves that interactive multimedia can improve student learning outcomes.

Based on the description of considerations that were outlined, it would require a study of the application of media-based interactive learning culture through ASSURE development model to improve students' critical thinking skills of primary school teaching.

Method

The method used was experimental research with two treatments involving two different groups. The first group was a group that was given a learning using a multimedia-based interactive multimedia teaching materials product and the second group was given varied lecture lessons. From both groups, the students' critical thinking skill is seen. While products based interactive multimedia teaching materials developed culture ASSURE development model (Smaldino, 2011: 111-139) include (1) Analyze Learner, (2) State Standards and Objectives, (3) Select Strategies, Technology, Media, and Materials, (4) Utilize Technology, Media, and Materials, (5) Require Learner Participation, (6) Evaluate and Revise. Design of test on product development done through expert validation test material, linguists.
The population is all students maha Semester 7 University PGRI Madiun. The sampling technique used was cluster random sampling, in order to obtain semester 7th grade B as an experimental group and half of 7th grade D as a control group. Collecting data using the test methods, methods of documentation, and academic documents. The instruments used are first tested before being subjected to the sample. Validity used is the validity of the content (content validty) and construct validity (construct validity). Diporoleh data were then analyzed using the t test (t-test). T test analysis requires a prerequisite test of the analysis of normality test and homogeneity test. Test in this study conducted with SPSS 20.

Results and Discussion

Peraplan research results based interactive multimedia teaching material culture through the development model ASSURE analyzed through testing to assumption as precondition analysis difference two treatment with t test (t test). This matter need do as a prerequisite on statistics that is test normality and test homogeneity. Results test normality ability th ink kritis could presented on Tables 1 and 2.

<table>
<thead>
<tr>
<th>Class</th>
<th>Test results</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1.019</td>
<td>0.902</td>
<td>Normal</td>
</tr>
<tr>
<td>Experiment</td>
<td>0.827</td>
<td>0.781</td>
<td>Normal</td>
</tr>
</tbody>
</table>

Based on data table 1 show that value (sig.)> 0, 05 so decision Test H0 accepted. this could concluded that all sample on research this origina ted from normally distributed population.

<table>
<thead>
<tr>
<th>Variables F</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBK</td>
<td>1.092</td>
<td>0.570 Homogeneous</td>
</tr>
</tbody>
</table>

Based on data Table 2 show that value (sig.)> 0, 05 so decision Test H0 accepted. this show that all sample originated from population varian c e homogeneous. Results from test hypothesis the application of
multimedia-based interactive multimedia teaching materials to ability critical thinking could seen on Table 3.

Table 3. Test Results Based Interactive Multimedia Learning Material Culture to Ability Think Critical

<table>
<thead>
<tr>
<th>Variables</th>
<th>t</th>
<th>Df</th>
<th>Sig</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>KBK</td>
<td>6.992</td>
<td>68</td>
<td>0.000</td>
<td>Differentreal</td>
</tr>
</tbody>
</table>

Based on data table 3 show that results decision test (sig) <0.05 so this means H1 received. The average acquisition value ability think critical between control class with experiment class differentreal. While the average database interactive multimedia teaching material culture to ability think critical presented on Table 4 and Figure 1.

Table 4. Average Data of Critical Thinking Ability

<table>
<thead>
<tr>
<th>Results Statistics</th>
<th>Control</th>
<th>Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>63.09</td>
<td>80.37</td>
</tr>
</tbody>
</table>

![Histogram Comparison Average Thinking Ability Critical](image)

Figure 1. Histogram Comparison Average Thinking Ability Critical

Based on Table 4 and Figure 1 show that the average value ability think critical students class experiment more high of the students class control. Difference the average value of the could is known that cultural-based interactive multimedia teaching materials take effect positive to ability think critical. It because, lecturer invite students for involved active good on physical and mental learning, makingmaha students learn meaningful. Besides that condition the corresponding with theory learn Ausubel. Student construct knowledge on together through discussion group allows maha students couldrevealed idea,
listen the opinions of others and on together build understanding. Corresponding with theory constructivism Where students wake his knowledge it self. Student invited active think recognize problem and do trial for looking for answer problems encountered to on preparation conclusions. It corresponding with theory learn Bruner invention (Da har, 2011:80). Student solves representing the problem events real result maha students will involved in behavior think. Problems could solved through use experimentation systematically. It correspondi ng with a teori development Piaget (Mulyasa, 2003: 137).

There are four indicators indicators critical thinking skills that are used in this study, namely: the ability to find similarities and differences (KBKr1), the ability to give a reason (KBKr2), the ability to make inferences (KBKr3), and the ability to use the principle of an acceptable (KBKr4). Percentage enhancement skill think critical college student on every indicator class experiment and class control presented on picture 2.

![Graph showing percentage indicator critical thinking skills.](image_url)

**Figure 2. Comparison of Percentage Indicator Critical Thinking Skills.**

Based on analysis on every indicator could is known that enhancement the highest on second class happen on the same indicators, namely ability make In conclusion, with acquisition each amount 67 on class control and 86 on class experiment. Enhancement the highest on indicator interesting. Conclusion, the implications from ability reasoning logical that also come along growing.
Enhancement ability in inference logic and find concept next could used college student for improve ability in interesting something conclusion from something problems.

The design of interactive multimedia based culture developed involve college student for earn experience, and do experiments permit they for find principles that itself. The learning process Where college student involved on directly infind own a concept expected give more results good. Some advantages that can be obtained from learn invention this among other things:

1. Knowledge that could last longer and more easy remembered compared with knowledge learned with other ways;
2. Results learn invention have the effect of the higher transfer good from on results learn more. This concepts and principles that have owned someone will more easy applied in situations new.
3. Learn invention could improve reasoning college student and ability for think on free (Dahar, 2011).

Difference considerable increase big on indicator ability use principle this easy understood because framework think early indeed already there is one very students. In learning there trend college student formaintain framework think the to they got it explanation or rational picture that will cause strong then in framework think that if already correct presence, and existence change paradigm to towards a more corresponding if framework think that there previous less right (Gunawan, 2012).

Skills think critical including wrong one skills think level high. Skills think critical ones sentials skills complete problem. According to Ennis (1996), thought critical is ability reasoning and think reflective directed for decide things that convince for do. Think critical is think sing in sense and reflective focuse dont taking decision about what door believed. Sign insense means think base do non facts for produce the best decision. Reflective that is looking for with conscious and assertive possibility the best solution.

Think critical as wrong the process of thinking level high could used in Setting up a national system conceptual participants educate so is wrong the process of thinking conceptual level high (Liliasari, 2002). Think critical is aspect important in modern study so that educators interested for develop think critical to students.

Skills think critical need developed in self college student because through skills think critical college student could more easy
understand concept, sensitive will problems that occur so could understand and complete problem and able apply concepts in different situations. With ability think good critical could give good recommendations for do something action. Its essence think critical is something attitude used forgive assessment to something (Ennis, 1996).

Development skills think critical has long enough note as aim main education. However, studies to ability think college student revealed that skills think critical no developing without businesses that are explicit and deliberate implanted in development (Zohar, 1994). A college student no will could develop skills think critically with good if no trained think on critical in field learned study (Meyers, 1986).

**Conclusions and Suggestions**

The results showed that students' critical thinking skills are taught with interactive multimedia-based learning culture based higher than students taught conventionally. Indicator so fability to make conclusions have increased greater than other indicators. This is caused partly by the characteristics of the culture-based interactive multimedia giving students the opportunity to practice making forecasts and independent trying to prove the truth of his estimates before give conclusions from a data or problem. Highest and lowest increase in both class happened on the same indicators, the interesting to traced more further.

**References**


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