

# Utilizing Students' Critical Thinking Skill On *Undang-Undang Dasar 1945* Through Android (*Gejog Lesung*) Based-E-Learning Media

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## ABSTRACT

The android-based learning media development for civic education learning process is very important to develop. This study was purpose determining students' critical thinking skills enhancement using Android (*Gejog Lesung*) based civic elearning. The method used in this study was a quasi-experimental method, conducting to one-group Pretest-Posttest Group Design. The population Public senior high school Ngaglik 1 in the 2019/2020 Academic Year. The sample in this study was determined by cluster random sampling and focusing on represented a class to be a sample. The research instrument used was a matter of pretest-posttest. Data analysis using t-test. The results of the study showed that (1) Android (*Gejog lesung*) based-civic elearning was able to improve the critical thinking skills of students on Public senior high school Ngaglik 1 Sleman, Yogyakarta, *Undang-Undang Dasar 1945* with values n-gain of 1,34 in the high category. In accor with the data obtained, it can be seen that the android (*Gejog lesung*) based civic e-learning can have a high or positive influence on improving the critical thinking skills of first class students in Public senior high school Ngaglik 1, Yogyakarta on the material provisions of the *Undang-Undang Dasar 1945* in the practice framework of state government.

**Keywords:** *android (GejogLesung), civic e-learning, critical thinking, civic education*

## 1. INTRODUCTION

21<sup>st</sup> century skill is an educational development part. characterized by a comprehensive linkage in knowledge. In addition, it also integrates technology and education due to encouraging mindset changes and thinking skills utilization [1][2]. Students will be easier to access knowledge while using information technology in. The 21st century competence development is a provision for students to take part in the real world [3]. These competencies include creativite thinking skill, critical thinking skills, communication, collaboration, a self-directed problem solving, innovators, media literacy, global awareness and financial literacy for students' future preparation. One of an important thinking skill is critical thinking skill [4]. However, learning process is still limited in textbook substances or textbook based lessons. Indeed, students' critical thinking skill is still lacking. Civic education is an important social learning which ask students to have a critical thinking skill due to it builds and possess students' moral [5]. Therefore, the integration between students' critical thinking skills and

civic education learning needs to engage so civic education learning process is not be impressed as a contextual learning, memorization and boring.

The 21<sup>st</sup> century is also referred to technological revolution era [6]. It is because of globalization, learning innovation and children's skills development [7]. To add, it also requires knowledgeable and ICT literate learners. Moreover, 4.0 industrial revolution era requires people to have digital information-based life patterns in all sectors [8]. One of them is education sector [9]. It demands that education must prepare quality graduates, globally competence, technology and communication development, big data, and cloud computing. It developed human resources production to committed and flexible in good quality manufacturing [10]. One of them is the technology use for educational media development. However, the technology-based education media development is still lacking. Whereas educational media is a channel to enhance knowledge optimally and efficiently [11]. Therefore, digital technology-based learning media is needed to improve students' critical thinking skills [12].

Civic learning media development needs to conduct [13]. It aims to overcome limitations in learning. However, in reality there is just some civic learning media for students' critical thinking skill engagement. [14]. focusing on android based-learning media development. The android-based learning media development for civic education learning process is very important to develop [15][16]. However, Civic education learning process just use very simple learning media and the textbooks which consume a lot of paper, environmental unfriendly, and technology lack use of learning media development. Therefore, Android-based civic education learning media needs to develop urgently. On the other hands. Implementation of Civic Education as part of education is also demanded to be able to preserve positive cultural values and create more critical thinking changes towards a better direction of life [17]. However, in learning, Civic Education learning has not yet developed local wisdom-based learning. Meanwhile, learn the lessons that must be learned about the culture of participants who can get opportunities for students to get meaning and complete understanding of the information they get, as well as information on scientific application in negotiations related to their cultural community [18]. People prefer the practicality and speed of technology. Meanwhile, Indonesia can support and preserve a variety that includes dance, song, performing arts, musical instruments, and so on called local wisdom. One of them is Javanese art, consisting the of *Gejog Lesung*.

*Gejog lesung* is an art origin along with an increasingly advanced era the development with the presence of technology, the life of the community in the village is increasingly affected by the influence it causes. The activity of pounding rice in mortar which is done in mutual cooperation has been replaced by activities in the form of a machine. So that the existence of the *Gejog Lesung* is increasingly eroded by the age community. The art is already quite difficult to find in rural communities [19]. Therefore there needs to be special efforts made in preserving and promoting Indonesian arts such as the *Gejog lesung*, not only limited to being a part in the development of a tourist village in Yogyakarta, training in the arts, but also including the arts as a part in increasing students' critical thinking in learning such as e-learning learning media that suits current educational needs.

## 2. METHOD

This research methodology is a quasi-experimental study. It uses one grup pretest posttest design [20]. The learning process use *Gejog Lesung* android based civic e-learning media. This media is used to train the high school students' critical thinking skills and introduce one

of the cultures of the Indonesian people in Yogyakarta, *Gejog lesung*. This research was conducted in Sleman Regency, Yogyakarta, Indonesia. Then, subject is 35 students. In total are first grade students on Public senior high school Ngaglik 1 Sleman, Yogyakarta. Indonesia. The test used in this study aims to collect data consisting of pretest and posttest critical thinking skills questions. In the test there are five multiple choice questions with HOTS criteria for critical thinking. Validation is done by expert judgements.

### 2.1 Initial Data Analysis

Normality test is used to see the distribution or distribution of student values in one class, whether the results of the pretest and posttest results are normally distributed or not. To conduct a normality test, the SPSS application is used.

### 2.2 Hypothesis Test

This hypothesis test is used to test the hypotheses that have been submitted. Hypothesis testing is done by t-test to determine the different power of students' critical thinking skills on the material provisions of the *undang-undang Dasar 1945* between before and after using the *Gejog Lesung* android based civic e-learning media toward students' critical thinking skills engagement. Hypothesis testing is done by t-test using the SPSS application. Decision making for hypotheses using the criteria for acceptance or localization of the null hypothesis ( $H_0$ ) at a significance level of 5% is if  $t_{test} > t_{table}$  then the null hypothesis ( $H_0$ ) is rejected or alternative hypothesis ( $H_a$ ) is accepted, but if  $t_{test} < t_{tabel}$  is null hypothesis ( $H_0$ ) accepted or alternative hypothesis ( $H_a$ ) is rejected.

### 2.3 N-Gain Test

To find out the increase in students' critical thinking skills between before and after being treated, the gain formula is used formula 1. Then N-Gain interpretation according to is presented in table 1.

$$g = \frac{(S_{post} - S_{pre})}{(100 - S_{pre})}$$

Information:

$g$  = normalized gain

$S_{post}$  = posttest value

$S_{pre}$  = pretest value

**Table 1.** Classification of Effect Size

Percentage	Interpretation
$g \geq 0,7$	High
$0,3 \leq g < 0,7$	Medium
$g < 0,3$	Low

## 3. RESULT AND DISCUSSION

### 3.1 Critical Thinking Skills Research Data

Table 2. present research data on critical thinking skills scores based on the pretest posttest results.

**Table 2.** Data on Critical Thinking Skills

Data source	Class	
	Pretest	Posttest
Min	40	60
Max	90	100
Mean	66,14	85,00
Median	60,00	85,00
SD	18,196	10,556

Table 2, observed that the study results show the critical thinking skills average scores that differ greatly or almost not the same. The test results after treatment with *Gejog lesung* android based civic e-learning has an average critical thinking skill score higher than that of classes that do not were given *Gejog lesung* android based civic e-learning or conventional learning.

### 3.2 Testing the Analysis Prerequisites

Normality and homogeneity tests were performed on pretest and posttest data of first grade students' on Public senior high school Ngaglik 1 Sleman, Yogyakarta.

**Table 3.** Student's Pretest and Post Test Normality

Class	Shapiro-Wilk		
	Statistic	Df	Sig.
Pretest	0,930	35	0,027
Posttest	0,913	35	0,009

Table 3 present both pretest value and posttest value have a significance value above 0.05 so that the data can be caused normally distributed.

### 3.3 Hypothesis Test

As for the hypothesis that proposed are:

$H_0$ : There is no effect of the android *Gejog Lesung* based-civic e-learning on the critical thinking skills of first grade students' on Public senior high school Ngaglik 1, Yogyakarta.

$H_a$ : There is an effect of the *Gejog Lesung* android based civic e-learning on the critical thinking skills of first grade students' in Public senior high school Ngaglik 1, on Undang-Undang Dasar 1945 topic.

**Table 4.** T-Test Results of Students' Critical Thinking Skills Gain Data

Learners' Critical Thinking Skills	Levene's Test for Equality of Variances		t-test for Equality of Means		
	F	Sig.	t	Df	Sig. (2 - tailed)
Equal variances assumed	2,096	0,903	-7,024	68	0,000
Equal variances not assumed			-7,024	63,863	0,000

Table 4, the t-test is carried out using the assumption that both variances are equal (equal variances assumed). The value of t value for the same gain variance is -7,024 with a degree of freedom 68 and a significance value of 0,000. Based on the table, the value of t for  $df = 68$  is 1,995. From the signification significance level of  $1,995 < 0,05$ , it can be

concluded that  $H_0$  is rejected  $H_a$  is accepted. Since  $H_0$  was rejected and  $H_a$  was accepted, it can be concluded that there was an influence of the *Gejog Lesung* android based civic e-learning on the critical thinking skills of first grade students in Public senior high school Ngaglik 1, Yogyakarta on Undang-undang Dasar 1945.

### 3.4 Improving Students' Critical Thinking Skills Material provisions of the Undang-Undang Dasar 1945

Increased critical thinking skills are calculated as a whole in the class average using n-gain calculations.

**Table 5.** N-gain data

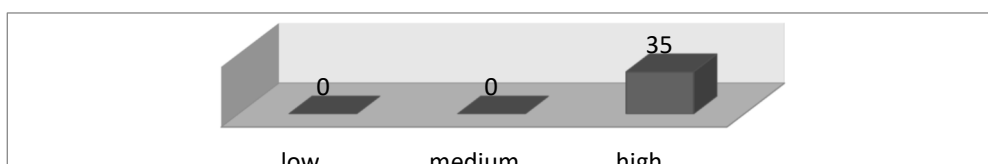
Number of Samples	Average N-gain	Classification
35	1.34	Tinggi

Table 5 shows that the pretest and posttest results on 35 students experienced an increase in critical thinking skills on the material provisions of the *Undang-Undang Dasar 1945*. The results showed an n-gain of 1.34 with a high category.

### 3.5 The Effect of *Gejog Lesung* Android Based Civic E-Learning on Critical Thinking Skills

This product is in the form of a learning media for Civic Education on the provisions of the *undang-undang Dasar 1945* in the framework of state government practice. This media was applied to android platform based mobile phones to support educational needs in the 4.0 revolution era. This media was developed with the iSping application [21]. This product is a learning media that is creative, innovative, and educative so that learning activities become more conducive, interactive and fun. In addition, Therefore, this product can improve the critical thinking skills of First class on Public senior high school Ngaglik 1 on the provisions of *Undang-Undang Dasar 1945* in the framework of implementing state government practice effectively and attractively for use in teaching and learning activities using Android technology from smartphones.

#### 3.5.1 Remining topics Critical Thinking Skills



**Figure. 1** N-gain result

Figure. 1 has been explained, that the *Gejog lesung* android based civic e-learning as a whole has n-gain for students' critical thinking skills on the topic of *Undang-Undang Dasar 1945* of 35 Students in a high category. Here is an overview of the android *Gejog Lesung* based on civic e-learning.

**Figure. 2** Civic E-learning Media



The *Gejog Lesung* is one part various physical arts that contain many educational values, local wisdom. The educational values contained in the *gejog lesung* be relevant to the values contained in the opening of the Undang-Undang Dasar 1945 to be understood and studied are as follows: The religious value of the *Gejog lesung* is reflected in the variety of *nutu* movements performed during the performance. The meaning of the *nutu* movement is accordance with the meaning contained in the preamble to the *Undang-Undang Dasar 1945*. "thanks to the grace of God Almighty and by being encouraged by noble desires, so that a free national life". This means that in the *nutu* movement in the *Gejog Lesung* it can be interpreted as a form of gratitude for the abundant rice harvest and the natural blessings given to farmers by God Almighty. The value of courtesy is vartely movements interpretation *Nyingset Serong*. This movement also contains the meaning of respect, namely respect to the King and invited guests present. The meaning of the *Nyingset Serong* movement is also in accordance with the meaning contained in the preamble *Undang-Undang Dasar 1945*. "just and civilized humanity". This means that the *Nyingset Serong* range of motion means that humans must respect and protect one another.

The responsibility value is an interpretation of the *Nekuk Siku Mlumah Asto* various movement. The meaning of the *Nekuk Siku Mlumah Asto* movement is also in accordance with the meaning contained in the opening of the *Undang-Undang Dasar 1945*. That is "realizing a social justice for all Indonesian people". This means that the range of movements of *Nekuk Siku Mlumah Asto* means that every human being must be able to take responsibility for what he has chosen. Ethical values are interpretations of *kothekan and Nginteri* variety movements. The *kothekan and Nginteri* meaning of movements is also in accordance with the meaning contained in the preamble of the *Undang-Undang Dasar 1945*. "the populist of money is led by wisdom in the deliberation of representation". This means that the variety of movements of *kothekan and Nginteri* means that every human being has the responsibility and ethics in holding musyawawah to realize a socially just State. Some research that has been done, but the research is still lacking in developing aspects of students' critical thinking skills. previous research only discusses how about the *gejog lesung* history and the *Gejog Lesung* movement, and only develop us about the methods and models of *gejog lesung*. therefore, these *Gejog Lesung* became the best answer for developing critical thinking skills on aspects of instructional media in Indonesia, especially in public senior high school 1 Ngaglik, Yogyakarta.

#### 4. CONCLUSION

The study results concluded that learning using android (*Gejog lesung*) based civic-e-learning as a whole has n-gain for students' critical thinking skills on the material provisions of the *Undang-Undang Dasar 1945* 1.34 with a high category. This means that learning uses media in the form of android *Gejog lesung* dance based civic e-learning developed on android platform-based mobile phones to support educational needs in the 21st century and the demands of technology-based learning in the 4.0 revolution era. This media was developed with the iSping application. This product is a learning media that is creative, innovative, and educative so that learning activities become more conducive, interactive and fun. Therefore, this product can improve the critical thinking skills of class X high school students in the provisions of the *Undang-Undang Dasar 1945* in the framework of implementing state government practice effectively and attractively for teaching and learning activities Android technology from smartphones.

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