GAMIFICATION BASED ON LOCAL STORIES’ EFFECT ON STUDENTS’ LEARNING MOTIVATION

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Abstract
In the 21st century, the use of innovative and digital-based teaching media are required. This research aimed at examining the effect of gamification based on local stories as teaching media on fifth grade elementary school students’ motivation. Quasi experimental with one group pre-test post-test design was implemented. The study was conducted at SD N 1 Penarukan where 25 of fifth grade students in academic year 2019/2020 were involved as the sample of study. Three instruments were administered to collect the data; pre-test post-test, treatment instrument and interview. The result showed that post-test mean score has significantly improved compared to pre-test score (42.29 > 23.35). Hypothesis testing result (paired sample t-test) showed the tobs value was higher than tcv (20.811>1.677) with α = 0.05, which indicated that gamification positively affected students’ motivation. The interview result revealed that the students are highly motivated to learn by using gamification.

Keywords: gamification, local stories, motivation

INTRODUCTION
The rapidity of technology advancement in the 21st century or renown as industrial revolution 4.0 has significantly affect many fields, including education (Orcid, Ozgur, & Orcid, 2019). Technology has become a huge part in educational system (Figueroa, 2015). Industrial revolution 4.0 has changed educational paradigms where the implementation of student-centered are demanded (Almeida & Simoes, 2019; Ashraf, Ahmadi & Hosseinnia, 2017). Student-centered emphasizes student’s role as an active participant and develop their ideas through exploring and constructing information by their own (Ashraf, Ahmadi & Hosseinnia, 2017). Students are also required to be more creative and innovative in utilizing technology to support their learning.

Hysa (2014) argues that the students should be comprehensively equipped not only with knowledge but also skills to do the works that machines cannot do. 21st century education system provides the required skills that will help students to overcome challenges and become successful in globalization world (Bedir, 2019).
Those required skills are known as 4C skills; critical thinking, communication, creativity, and collaboration (Bedir, 2019; Goldberg, 2015). Communication is one of the essentials skills that is needed to be mastered by the students, particularly having excellent communication in English (Zain, Muniandy & Hashim, 2016). English is acknowledged as an international language that allows people to communicate with other people in the world. Thus, in order to be fluent in communication, speaking skill is needed.

Speaking is helpful to let people express their ideas, feeling, and thought (Tampubolon, 2018). The key of success in speaking is doing frequent practices (Dewi, Kultsum & Armadi, 2016). Unfortunately, students are still incapable to speak confidently to express their idea, thought and feeling (Zyoud, 2016). The issue occurs due to the students’ low motivation in doing speaking practice and their fear of making mistake. Ma’rifah & Wulandari (2015) states that the lack of motivation is one of the causes of students’ low abilities in speaking. Thus, building students’ motivation is basically needed.

Motivation is an inside factor that brings impactful effect in achieving learning objectives. Students with high motivation tend to obtain the knowledge better and encourage themselves with enthusiasm and willingness in learning (Alsawaier, 2017; Mohammed, Arslan & Sahbi, 2017; Pavelescu, 2019). A study conducted by Tentama, Subardjo & Abdillah (2019) revealed that students with high motivation have excessive efforts to achieve the goals by gaining good grade in learning. Contrarily, students who acquired low motivation assume that the learning process is boring and burdening. The aforementioned statement proves that students’ motivation and students’ achievement are related and effect each other.

Based on the result of preliminary observation conducted in SD 1 Penarukan, several issues were found. First, the students felt bored and uninterested towards English learning due to the use of conventional teaching strategy by the teacher. Students were only asked to answer question in text book and perform the text they have memorized. Second, students lost their confidence in speaking since they passively communicate and have less activity in classroom. Besides, they also afraid of being laughed by their friend since they are not able to pronounce the words correctly. Those mentioned issues contribute to students’ low learning outcome in speaking. In order to overcome those problems, an appropriate and interesting teaching media is required to increase students’ motivation in speaking.

Teaching media has significant role in increasing students’ motivation in the learning process since it is an effective and efficient support tool that can be used to explain the material, engage the students during the learning and achieve the learning objective (Sari & Nurcahyono, 2018; Puspitarini & Hanif (2019). Appropriate teaching media can build an enthusiastic atmosphere of learning process (Alomari, Al-samarraie & Yousef, 2019). Lisa (2019) argues that the implementation of challenging teaching media such as game could stimulate students’ motivation through contextual and interactive learning. One of teaching media that provide game and contextual learning is gamification.

In present, Gamification has been developed and implemented as teaching media. Gamification is a mechanic-based game thinking that attract attention, motivate action, promote learning, and solve problems in the learning process (Rabah & Cassidy, 2018). Gamification provides the text completed by illustrations (Alomari, Al-Samarraie & Yousef, 2019). Gamification emphasized process and results. Gamification
is considered as influencer that increase students’ motivation and improving students’ English achievement through learning by doing (Brull & Finlayson, 2016; Nitiasih, Rini, Mahayanti, & Budiarta, 2019). Thus, the present study implemented gamification as a media for increasing students’ motivation in speaking English.

Afterwards, there are many gamifications that have been developed by the experts. Nitiasih, Budiarta, & Mahayanti (2019) has developed gamification based on Balinese local stories such as the local stories entitled *I Cupak and Gerantang, Manik Angkeran, Siap Selem, Sugih and Tiwas, and I Ketimun Mas*. This game was developed by considering young learners’ characteristic where in this stage they learn about vocabulary, word arrangement, and finding the best way in labyrinth. Those games were packaged in the form of adventure games based on Balinese local stories.

Several studies have been conducted in the field of gamification particularly investigating students’ motivation. Wichadee & Pattanapichet (2018) conducted a study about enhancement of performance and motivation through application of digital games in an English language class. The result proved that the students had strong positive spirit towards digital games media and it obviously increase students’ motivation and enhance students’ learning outcomes. The aforementioned statement supported by study conducted by Papp (2017) about gamification effects on motivation and learning to primary and college students. The study revealed that gamification could increase motivation, engage students and help students express their idea at both the primary and college level.

Currently, the study of gamification based on Balinese local stories for motivating young learners in the learning English has not been conducted. Thus, conducting this study is necessary in order to investigate whether gamification based on Balinese local story can affect young learners’ motivation. The current study focused on the implementation of gamification based on Balinese local story as a teaching media that has been designed and developed by Nitiasih, Budiarta, & Mahayanti (2019). The novelties of this present study were the Balinese Local story as the content of Gamification and the students’ motivation as the measured skill.

**METHOD**

Quasi experimental with one group pre-test and post-test design was implemented. Quasi experimental design has two major characteristics; First, the use of experimental group only without control group for comparison. The dependent variable is measured in one group of participant by comparing before (pre-test) and after (post-test) (Gay, Mills & Airasian, 2012). Second, the implementation of a linear ordering that required dependent variable assessment before and after a treatment. The experimental group were repeatedly pre-tested and post-tested in six meetings. In order to obtain profound information, interview with the students was conducted. The results of pre-test and post-test scores were analyzed and compared quantitatively to define the treatment effectiveness (Fraenkel, Wallen & Hyun, 2012).

There were 25 of fifth grade students in academic year 2019/2020 in SD N 1 Penarukan involved as the research sample. The sample were chosen through purposive sampling because from the result of observation, students in SD N 1 Penarukan fulfilled two characteristics: 1). the use of conventional learning media or textbook in learning English. 2). the students still incapable in speaking due to their low motivation.
Three instruments were employed to collect the data, such as: pre-test and post-test instrument, treatment instrument and interview. First, the pre-test and post-test instrument were in the form of an oral question for speaking test. The speaking test was developed based on three basic competencies, including basic competency 3.3 (adjectives), basic competency 3.4 (activities in daily live), and basic competency 3.7 (things in surrounding). Second, the treatment instrument was gamification based on Balinese local stories entitled: *I Cupak and I Gerantang, I Ketimun Emas, I Sugih teken I Tiwas, Manik Angkeran and Siap Selem*. Third, the study implemented unstructured interview. The content validity of the interview guide had been verified by two experts analyzed through Gregory’s formula. The score result of the interview’s content validity was 0.67, which classified as high and can be implemented.

**FINDINGS AND DISCUSSION**

**Findings**

The result of study was analyzed descriptively and inferentially. Descriptive analysis was used to analyze the result of pre-test and post-test. Meanwhile, inferential analysis was used to analyze normality test, hypothesis testing, and effect size test. The result of data analysis and interview were presented as follows.

*The Result of Pre-test and Post-test*

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
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</thead>
<tbody>
<tr>
<td>Mean</td>
<td>25.35</td>
<td>49.29</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>2.13</td>
<td>4.89</td>
</tr>
<tr>
<td>Median</td>
<td>24.67</td>
<td>48.67</td>
</tr>
<tr>
<td>Max. Score</td>
<td>29.33</td>
<td>58.67</td>
</tr>
<tr>
<td>Min. Score</td>
<td>22.00</td>
<td>40.67</td>
</tr>
<tr>
<td>Variance</td>
<td>4.57</td>
<td>24.00</td>
</tr>
</tbody>
</table>

Table 1 shows that the mean score of pre-test was 25.35 and post-test was 49.29. Post-test score was higher than pre-test which indicated that students could achieve better score in post-test.

*Normality Test Result*

In order to examine the significance difference of pretest and posttest score, a t-test is conducted. In conducting the t-test, the data distribution was analyzed first to determine the type of t-test that should be used. If the data are normally distributed, parametric test is used whereas non-parametric test is used to analyze the data that are not normally distributed. The data are categorized normal if the value of Kolmogorov-Smirnov is higher than .05.
Table 2 shows the value of Kolmogorov-Smirnov for pre-test was .176* and post-test was .200*. Those values are higher than .05, which indicated that data is normally distributed. Therefore, the paired sample T-test can be conducted.

**Hypothesis Testing Result**

Hypothesis testing was conducted to examine whether there was any significant effect of using gamification based on Balinese local stories as teaching media towards the fifth grade students’ motivation through paired sample t-test. There were two qualifications of determining decision of rejected or accepted hypothesis. If t-observed of the data (tobs) was higher than the t critical value (tcv), the alternative hypothesis was accepted. If the t-observed of the data (tobs) was lower than the t critical value (tcv); the alternative hypothesis was rejected.

A significant mean difference is indicated if the value of Sig. (2-tailed) is lower than .05. The result of hypothesis testing in table 3 revealed that the value of Sig. (2-tailed) was .000 < .05. It means there was significant difference between pre-test and post-test. The hypothesis is determined by comparing the value of the tobs and tcv. T-test analysis result shows that the value of the tobs was 20.811 and the value of the df was 49. Based on the t table-distribution value, the tcv for df 49 was 1.671. The value of the tobs > tcv; 20.811 > 1.677. Since the value of tcv was lower than tobs, it indicated that the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted. Conclusively, gamification based on Balinese local stories as teaching media contributed a significant effect on fifth grade elementary students’ motivation.
**Effect Size Test Result**

Effect size is conducted to measure the magnitude of difference between both pretest and posttest by using Cohen’s $d$ measurement (Cohen, 2007). There are three classification of effect size such as, small ($d = 0.2$), medium ($d = 0.5$), and large ($d \geq 0.8$). The larger of the effect size means the stronger relationship between two variables. The result of effect size calculation can be seen in table 4.

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M)</td>
<td>25.35</td>
<td>49.29</td>
</tr>
<tr>
<td>Standard Deviation (s)</td>
<td>2.13</td>
<td>48.67</td>
</tr>
<tr>
<td>Sample Size (n)</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

Cohen’s $d = 16.782004$

The result of effect size value of Cohen’s $d$ showed in table 4 is 0.694964. Since the Cohen’s $d$ value is higher than 0.8, the treatment effect was categorized as large.

**Interview Result**

Interview aimed at obtaining profound information about students’ motivation by examining students’ feeling and response during the implementation of gamification based on Balinese local stories in speaking class. The results revealed several points. First, students stated that they were more encouraged to learn English and had desire to acquire knowledge since the material provided in the game was interesting, challenging, and make them able to absorb the material. Second, students were more confident in expressing their idea, thought and feeling because they learn many vocabularies easily from the game instead of from the textbook. By having sufficient vocabulary, they were able to speak progressively. Third, gamification had successfully minimize students’ boredom throughout the learning since they were actively participated while playing the game. Students said that they learned in an enjoyable circumstances through learning by doing. Fourth, students’ engagement in the classroom was increasing. Students engaged more with their friends since they played the game together. They were able to collaborate with their friends and enthusiastically involved throughout the learning.

**Discussion**

**The Effect of Gamification based on Balinese Local Stories on Students’ Motivation**

The implementation of gamification in the classroom was done based on theories proposed Gros (2007). There are four steps to be done, such as: experimentation, activity, discussion and reflection. The first step that has been conducted was experimentation. In this step, several preparation was done including choosing proper gamification, determining suitable learning objectives and creating lesson plan Gros (2007). It aimed to assure that the learning process would ran smoothly. Gamification based on Balinese local stories that have been developed by Nitiasih, Budiarta & Mahayanti (2019) were chosen as teaching media. Those stories were; I Cupak and I Gerantang, I Sugih and I Tiwas, Manik Angkeran, I Ketimun Emas, and I Siap Selem. In order to reach the aim of learning, those stories were implemented based on fifth grade basic competencies. There were three basic competencies selected, including: basic competency 3.3 (adjectives of character and physical appearance), basic competency 3.4 (kind of activities in daily live), and basic competency 3.7 (things in surrounding). Each
of the basic competencies was implemented for two meetings with different story in every meeting.

The second step was activity. It was the step where gamification is implemented during teaching and learning process (Gros, 2007). Gamification was displayed in front of the class through LDC. It was completed with story text, narrator’s voice and illustrations. Mohammad, Sazali, & Salleh, (2018) stated that gamification in education completed with many features that makes the learning process easier to be done. Gamification based on Balinese local story was started when the narrator started to tell the story. Then, the students were asked to listen carefully and pay attention to the story. Students’ response towards this activity was excellent. They were easy to be controlled and seemed thrilled. The game was started after the narrator in gamification finished delivering the story. The students were required as the main user who played the game. The students play the game alternately with their friend. The game provided different challenges in different category level. It was divided into three levels and each level consisted of three sub levels.

During the learning activity, the students seemed enthusiastic and actively participated during the implementation of gamification based on Balinese local stories in the speaking class. Furthermore, they curiously asked the vocabulary that they could not understand. It proved that students’ initiative was developed. The aforementioned statement is in line with the theory proposed by Padmadewi, Agustini & Artini, (2017), interesting media in teaching aims at attracting learners’ attention and enthusiast throughout learning process. Almeida & Simoes (2019) also argue that Gamification is a mechanics-based media which is able to motivate action, solve problems and improve learning process. The statement also supported by Alsawaier (2017) that gamification can positively increase learning motivation and engagement in the classroom.

The third step was discussion. Discussion focused on the process of achieving learning objectives. The students were given a simple and understandable question after they had finished the game. The question was in a form of oral question that demanded the students to speak. Speaking test was used to measure students’ motivation in learning. The students were required to answer the questions given orally. Based on the speaking test result, students were able to speak in explaining what they had comprehend about the story through gamification instead of through conventional media. A promising improvement of students’ speaking skill can be seen if it was compared to their speaking skill before they received treatment. Beforehand, the students even could not say any word when they were asked about the game. They kept quiet and preferred to silent when they were asked to express their idea, feeling and thought. It occurred due to the lack of students’ motivation and lack of vocabularies. As consequence, they remained silent and passive. Moreover, the comparison could be noticed from the significant difference of pre-test and post-test mean score, where students’ mean score in post-test was higher compared to the mean score of pre-test. It revealed that during the learning activity, students showed a promising improvement on speaking skill. The aforementioned statement was supported by theory proposed by Kepecoglu (2019) that the use of gamification could encourage learners to complete challenges without fear and achieve their learning objective.

The last step of implementing gamification was reflection. Reflection aimed at giving the students chance to conclude and reflect on what they had learned throughout the learning activity. Several students were pointed randomly to summarize and tell what they have learned. Arda & Doyran (2017) states that based on young learners’
characteristics, they are easily to comprehend the explanation through seeing pictures, hearing and participating. By considering those characteristics, gamification based on Balinese local stories allowed students to see, hear and involve directly through playing game. Furthermore, students were also required to figure out what moral values they could learn from the stories. Local story provides an interesting and educable value in the story which can be learned by students from the character in the story. Students could learn and differentiate positive and negative behavior showed. The aforementioned statement supported by Indiarti (2017) who states that local story was an appropriate media to tell to young generations since they can learn and understand about the norm existed in their society. Hence, gamification is a suitable teaching media used for teaching the young learners.

The aforementioned statement was also supported by the result of interview conducted to the students. The interview aimed at examining students’ perspective and their feeling after being taught by using gamification. Most students stated that they always excited and ecstatic to learn English during the implementations of gamification. They also said that gamification helped them better in understanding and comprehending the language used in the game. They could learn how to pronounce the words correctly since gamification is completed with narrator and characters’ voice. Positively, those benefits affects their achievement especially in speaking. They became confident and brave to speak in English. It is in line with the statement stated by Tentama, Subardjo & Abdillah (2019) that students who have high motivation towards learning could make great efforts to achieve the goals of learning with consequently gain better grade. Kong (2009) also argues that high motivation can make the students forward in learning with willingness and enthusiasm. When an individual is motivated, he feels energized and inspired to act, however an unmotivated individual has no impetus to do so. The impact of high motivation will directly affect students’ excellent achievement in learning.

Regarding to the aforementioned statement, the significant effect of using gamification based on Balinese local stories as teaching media could be seen from mean score summary of pretest and posttest. The mean score of pretest was 23.35 and the posttest score was 42.29. It indicated that the posttest mean score was higher than the pretest mean score (42.29 > 23.35). Those result proved that after the students had been receiving the treatment, they were able to achieve better score in posttest instead of in pretest. Besides, the hypothesis testing result showed the value of Sig. (2-tailed) was .000. This value was lower than the level of standard (a=.05). It revealed that there was significant difference between pretest and posttest.

The result of this study is in line with the study conducted by Nitiasih, Budiarta & Mahayanti (2019) that the gamified local stories contribute to increase students’ motivation since it gives a new environment to acquire language and through local story, students can learn their culture and the value in character education profoundly. A study conducted by Yuen Ling (2018) proved that gamification has helped students’ motivation and it meaningfully facilitate students in learning. It was also supported by the result of study conducted by Wichadee & Pattanapicet (2018), which revealed that gamification can transform boring and difficult contents to be easier to understand and motivating. Furthermore, Papp (2017) revealed that after implementing gamification to primary students, the students motivation and engagement in the classroom is well-improved. Reading to the findings based on the result of the pretest, posttest and interview, the research question had been answered. Conclusively, gamification based
on Balinese local stories as teaching media gave significant effect on fifth grade elementary school student’s motivation.

CONCLUSION

According to the findings and discussion explained beforehand, the implementation of gamification based on Balinese local stories as teaching media gave significant effect towards fifth grade students’ motivation. It could be seen from the significant difference of pre-test and post-test results between before and after the treatments. Gamification could positively improve students’ motivation in learning speaking English. Furthermore, the result of interview revealed that students had desire to acquire the language, they felt more confident in delivering their idea, gained new vocabularies easily, and improved students’ engagement in the classroom. It indicated that the implementation of gamification had successfully established pleasant learning atmosphere.

The result of this study is expected to be able to provide knowledge for teachers about the use of gamification as teaching media. The teachers are also expected to develop professionalism in providing cheerful and meaningful teaching media. This study result is expected to give a reference of teaching media for the prospective teachers. As an implication, gamification is suitable to be used to facilitate students’ learning and boost their motivation in learning English.

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