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# INVESTIGATING THE EFFECT OF GAMIFIED BALINESE LOCAL STORIES AS A TEACHING MEDIA ON YOUNG LEARNERS' WRITING SKILL

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#### Abstrak

Penelitian ini adalah penelitian kuantitatif yang memiliki tujuan untuk menginvestigasi efek dari gamifikasi berdasarkan cerita lokal Bali sebagai media belajar terhadap kemampuan menulis siswa kelas 5 SD. Desain yang diaplikasikan pada penelitian ini adalah kuasieksperimental dengan one group pre-test post-test. Penelitian ini dilaksanakan dalam 6 kali pertemuan di SDN 1 Banyuning yang berlokasi di Kabupaten Buleleng, Bali. Penelitian ini menggunakan siswa di SDN 1 Banyuning sebagai populasi dengan sampelnya adalah 31 siswa kelas 5 SD pada tahun akademik 2019/2020. Ada dua jenis instrumen yang digunakan yakni; instrumen perlakuan dan instrumen pretest posttest. Instrumen perlakuan yang digunakan yaitu gamifikasi itu sendiri, sedangkan instrumen pretest posttest yang digunakan adalah dalam bentuk tes menulis. Para siswa diberikan pretest dan posttest di setiap pertemuan. Hasil dari pretest dan posttest menunjukkan bahwa nilai rata-rata post-test siswa lebih tinggi dibandingan nilai rata-rata pre-test (85.39 > 51.73). Kemudian, hasil dari pengujian hipotesis dengan paired sampe t-test menunjukkan bahwa nilai thitung lebih besar dari ttabel (13.533 > 1.796). Hal tersebut membuktikan bahwa terdapat efek yang signifikan dari penggunaan gamifikasi berdasarkan cerita lokal Bali sebagai media pengajaran terhadap kemampuan menulis siswa kelas 5 SD.

#### Abstract

 $21^{st}$  century learning requires the implementation of digital-based teaching media. The study aimed at examining the effect of gamification based on Balinese local stories as teaching media on fifth grade students' writing skill. Quasi-experimental research method with one group pre-test post-test was implemented. The study was conducted at SDN 1 Banyuning, Buleleng Regency, Bali. There were 31 samples of the fifth-grade students in academic year 2019/2020. Two instruments were administrated; treatment instrument (gamification based on Balinese local story) and pretest and posttest instrument (in the form of writing test). The students were repeatedly given six pre-test and post-test in the six meetings. The score of pre-test and post-test showed significant difference where post-test was higher than pre-test (85.39 > 51.73). The hypothesis testing result revealed that the tobs of the data was higher than the t cv (13.533 > 1.796) with ( $\alpha = 0.05$ ). This indicated that there was a significant effect of gamification based on Balinese local story is suggested to be used as teaching media to develop students' writing skill.

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In the 21st century era, the development of technology has significantly contributed to many changes in the world. Several changes have happened in various fields including technology and communication. In fact, the fourth generation of industrial evolution is categorized the emergence of supercomputer, smartphone, smart robot and smart cars, etc. which helps humans in simplifying their works (Schwab, 2016). Educational field has also affected due to the technology advancement. Association (2012) stated that in the industrial and agrarian economic, the "Three Rs" (reading, writing, and arithmetic) was enough to be mastered. However, the ability of "Three Rs" are obviously not enough in the current "flat world". Nowadays, learners are required to be professional communicators, designers, critical thinkers, and collaborators in order to survive and succeed in this global society. Thus, the term "4Cs" (Communication, collaboration, critical thinking, and creativity) exist in this era.

The rapidity of technology advancement has also shaped a new generation called 'Gen Z'. The fact that must be understood by teacher is that nowadays' learners are categorized as Gen Z generation. Gen Z belongs to the generation who was born between 1995-2012 (Singh, 2014). This generation is also renowned as 'Digital Natives', which means the Gen Z and technology are inseparable (Singh, 2014). Those facts need to be concerned by the teachers particularly in preparing appropriate teaching media for the learners. Plenty of teaching and learning medias have been produced. One of them is digital game. Digital game offers a great opportunity to combine education, game, and technology for learning media (Bal, 2019; Buhagiar & Leo, 2018). In this context, gamification is one of medias that can be used to teach the learners properly (Flores, 2015; Jauregi, 2016).

Gamification is a game aplicational mechanisms in non-gaming environments that aims at enriching the teaching and learning process (Deterding et al., 2011). It includes game-based mechanics, aesthetics and game

thinking. Gamification is able to gain people's attention, stimulate action, support learning, and solve problem (Muntean, 2002; Nehring et al., 2018). In educational context, this media is appropriate to be implemented at elementary and higher education levels (Papp, 2017). The implementation of gamification in learning environment will motivate students' willingness in learning (Kiryakova et al., 2013; Tan, 2014).

A study had been conducted in the field of gamification in educational context by Nitiasih et al. (2019). It was conducted to gamify Balinese local stories to provide Gen Z's better environment in learning English. This study specifically developed gamification with five Balinese local stories for young learners, such as the stories entitled "I Sugih and I Tiwas", "I Cupak and I Gerantang", "Manik Angkeran", "Timun Mas", and "Siap Selem". Local story is a story that is related to everyday experiences which a community encounters (Indiarti, 2017). Involving local stories in gamification can preserve the culture (Firdaus et al., 2013). Local story was chosen because it contains moral value that students can learn and the story is close with young learners' daily life.

The previous study about gamification based on Balinese local stories was a continued study which had not been implemented yet. The present study purposed at investigating the effectiveness of gamification based on Balinese local stories to facilitate the young learners to advance their English especially their writing skill. Writing skill was chosen for several reasons.

Writing is considered as a complex activity that allows people to express their ideas in a written form (Flynn & Stainthorp, 2006). Both adult and young learners use their thoughts, ideas and knowledge when they write (Jones et al., 2010). Considering that writing is a complicated activity, more exercises are needed by all English foreign learners (Saygılı, 2013). The study shows that human's brain at the young age is in the maximum condition to absorb any knowledge including language (Sukarno, 2008).

Thus, young age period is the most suggested age to start writing.

Young learners face more challenges compared to adult learners in writing since they have insufficient writing skill; their writing skill is not fully developed and their mechanics of handwriting still becomes the issue (Nunan, 2011). Based on the previous statement, teaching writing for young learners need different treatment, for instance by giving them writing exercise through copying or through guided writing (Scott & Ytreberg, 1990).

Unfortunately, most students argue that writing is more challenging than other skills (Berman & Cheng, 2010). This reality is contradicted with what is expected. This issue might occur due to the teaching technic or media used by the teacher which do not give sufficient exposure and fail to encourage students' motivation to develop their writing skill. For example, the use of innovative conventional technic and course book without integrating it with other appealing media. The overuse of course book should be circumvented as it may decrease young learners' motivation and engagement (Puskás, 2016). As consequence, the ongoing issue will still exist if the teacher fail to provide appropriate learning and teaching media (Kusumawardhani & Nurhayati, 2019).

Preliminary observation had been conducted in several schools in eastern part of Singaraja, Buleleng. The result of observation showed an unsatisfied condition where teacher often use course book and rarely provides students with engaging media. It caused students lose their motivation and easily distracted and bored when they were asked to write sentences in English. Another issue found was the lack of vocabulary mastery. The aforementioned statements indicate that the use of proper and engaging teaching media is importantly required (Rofiq et al., 2019).

Nitiasih et al (2019) had developed Gamification based on Balinese Local Stories as media for teaching and learning English particularly for teaching writing. The story provided in the gamification allows the students to learn many new vocabularies and to focus on

spelling, punctuation, and capitalization in a convenient way. The game also helps students in mastering more vocabulary through arranging scrambled words and matching word with picture in the game. Vocabulary mastery and mechanical system knowledge are the major things needed to help the students in writing. Gamification also successfully attract students' attention as it completed with attractive illustrations and sounds. Therefore, gamification brings great impact in helping students' writing.

Several similar studies about gamification have been conducted. Bal (2019) conducted a study entitled "Use of Digital Games in Writing **Education:** An Action Research Gamification". It aimed at examining contribution of gamification on students' writing skill. Research's result revealed gamification effectively improved the students' motivation in doing writing. Maslac et al. (2017) had conducted a study focusing on the influence of gamification towards students' engagement. The study revealed that gamification positively influenced students' engagement along the learning process. It proves that gamification is an interesting media to be used in English teaching and learning.

However, study about the gamification based on Balinese local stories for writing skill has not been conducted. Thus, investigating the effectiveness of gamification composed by Nitiasih et al. (2019) is necessary. This current study aimed at examining the effectiveness of gamification based on Balinese Local Stories on the 5th grade students' writing skill. This study took place in SD Negeri 1 Banyuning, Singaraja-Bali. There were 31 of fifth grade students involved. This study implemented One Group Pretest Posttest method in collecting the data to gain gamification based on Balinese local stories effect on the students' writing skill.

# **METHOD**

#### **Design and Materials**

One Group Pre-test Post-test design was used in order to reach the purpose of the study. Fraenkel et al. (2012) stated that one group pre-

test post-test design belongs to a quasiexperiment which has two characteristics. First, the use of one single group of participants which means there is no control group required for comparison. In this case all participants received equal treatment and assessment. Second, the implementation of a linear ordering that requires the assessment of dependent variable before and after the treatment. Thus, experimental group was given pre-test and post-test repeatedly. Pretest was conducted before the treatment then followed by the post-test after the treatment. In total, there were 6 meetings conducted to administrate pre-test and post-test. The scores obtained were quantitatively analysed. Then, pre-test and post-test score were compared in order to examine whether the media used is effective or not.

## **Participants**

31 fifth grade students in SDN 1 Banyuning in academic year 2019/2020 were involved in this study. Fifth graders were purposively chosen because the gamification based on Balinese local stories that had been developed beforehand was aimed for fifth grade students.

# Instrument

There were three instruments employed in this study, including; pre-test and post-test instrument, treatment instrument and writing rubric. First, the pre-test and post-test instrument were in the form of guided writing test. Six different writing tests were developed based on three basic competencies, such as basic competency 3.3: adjectives of character and physical appearance, basic competency 3.4: kind of activities in daily life, and basic competency 3.7: things in surrounding. Before implementing pre-test and post-test, content validity analysis was conducted. The instruments were examined by two experts by using Gregory's formula for gaining the analysis result. The result of content validity from Gregory Formula of each instruments is 1.00 which is considered as very high.

Second, the treatment instrument was the Gamification Based on Balinese Local Stories. Five different stories were used, such as I Cupak and I Gerantang, I Ketimun Emas, I Sugih teken I Tiwas, Manik Angkeran and Siap Selem. Third,

the writing rubric was used as an indicator to assess the students' writing tests. The writing rubric consists of four components which were adopted from several resources. capitalization; the correct use of capital letter in writing (Brown, 2000). Second, punctuation; a set of signs or symbols put on the sentences to make clear meaning and to define how they should be read (Brown, 2000; Harmer, 2001; Kane, 2000). Third, spelling; word formation with correct order of letters (Brown, 2000; Harmer, 2001). Forth, word usage; how word is used in certain circumstances (Kane, 2000). The writing rubric has been examined by the two experts through Gregory's formula and the result is 1.00 (very high level).

# **RESULT**The Result of Descriptive Analysis

After all of the students' scores were collected, their scores were summarized. From the table 1, it is seen that the mean score for the pre-tests from all treatments is 51.73 and the mean score for the post-tests from all treatments is 85.39. Hence, the mean score of the post-test is higher than the mean score of the pre-test.

Table 1. The Mean Score Summary of Pre-test & Post-test

	Meeting	Pretest	Posttest
Mean	1	49.81	85.87
Score	2	51.48	84.13
	3	48.06	85.48
	4	51.94	85.61
	5	53.48	86.84
	6	55.61	84.45
Mean S	Summary	51.73	85.39

Table 2. Descriptive Analysis of Pre-tests and Post-tests

	Pretest	Posttest
Mean	51.73	85.39
Standard Deviation	2.660	.985
Median	51.71	85.54
Max. Score	55.61	86.84
Min. Score	48.06	84.13
Variance	7.076	.972

By focusing on the mean score in the table 2, the mean score of the pre-test is 51.73 and the mean score of the post-test is 85.39. Thus, it can be stated that the mean score of the post-test is higher than the mean score of the pre-test.

### The Result of Normality Test

A t-test was finished in order to inspect the significant difference between the pre-test and the post-test. To specify the type of t-test that would be used, data distribution was analyzed first before administrating the t-test. Data that are normally distributed is analyzed by parametric test. meanwhile, data that are not normally distributed is analyzed using non-parametric test. If the value of Kolmogorov-Smirnov is higher than .05 the data are specified normally distributed.

The Result of Inferential Analysis
Table 3. The Result of Normality Test

	Kolmogorov-Smirnova		
	Statistic	df	Sig.
Summary of Mean Score in Pretest	.135	6	.200
Summary of Mean Score in Posttest	.200	6	.200

From the table 3, it can be seen that the value of Kolgomorov-Smirnov for the pretest is .135. Meanwhile, the value of Kolgomorov-Smirnov for the posttest is .200. Further, the value of Sig. of the pre-test and post-test is .200. Since the value of Sig. of the pre-test and post-test is higher than .05, it indicates that the data are normally distributed. Therefore, t-test could be started.

#### **Hypothesis Testing**

Hypothesis testing was conducted through paired sample t-test after the data were recognized normally distributed. It was done in order to determine the significant effect of the use of gamified Balinese local stories on the fifth-grade students' writing skill.

The significant effect of gamification based on Balinese local stories can be determined by looking at the value of Sig. (2-tailed) in the table 4. Since the Sig. (2-tailed) is .000 (lower than .05), it means that there is a

significant mean difference between the pretest and the posttest. Thus, it can be inferred that there is a significant effect of gamified Balinese local stories on the student' writing skill.

**Table 4. Paired Sample T-test on Pretest and Posttest Score** 

	Pair 1	
		Mean Pretest Mean Posttest
Paired	Mean	-
Differences		67.06333
	Std.	17.16649
	Deviation	
	Std. Error	4.95554
	Mean	
	95 % Lowe	r -
	Confidence	56.15627
	Interval of	_
	Difference	
	Uppe	r -
	11	77.97040
T		-13.533
Df		11
Sig. (2-		.000
tailed)		.000

#### **Effect Size**

To quantify the magnitude of difference between pretest and posttest, an effect size test was assigned. From the effect size test, information about the magnitude of the experimenter effect can be gained. There are three classifications of the effect, such as; *small* (d=0.2), *medium* (d=0.5), and *large*  $(d \ge 0.8)$ . The larger the value of the effect size, than the stronger relationship between two variables will be.

**Table 5. Effect Size Test Result** 

ttes
3.39
85
31
:

From the result of effect size test in the table 5, the value of Cohen d is 16.782004 which is larger than 0.8. Therefore, it can be concluded that the effect of using the gamified Balinese local stories is classified large.

### **DISCUSSION**

The implementation of the gamified Balinese local stories was done through steps arranged by Gros (2007). The steps consist of experimentation, activity, discussion reflection. Experimentation is the first step that should passed. According to Gros (2007), this by choosing the proper happens gamification, determining suitable learning objectives, and creating lesson plan before implementing the gamification in the classroom. In this study, experimentation was finished through selecting the gamification as the teaching medium, choosing proper basic competencies and learning objectives that match the gamification, and determining a certain gamification that would be implemented in each meeting.

Five gamifications with different Balinese local story were implemented, such as gamification with the story of "I Sugih and I Tiwas", gamification with the story of "I Cupak and I Gerantang", gamification with the story of "Manik Angkeran", gamification with the story of "I Ketimun Emas", and gamification with the story of "I Siap Selem". They were implemented based on three basic competencies namely; 3.3: adjectives of character and physical appearance, 3.4: kind of activities in daily life, 3.7: things in surrounding. Two meetings were done for one basic competency. The topic 'the adjectives of character and physical appearance' was taught by using gamification with the stories of "I Sugih and I Tiwas" and gamification with the stories of "I Cupak and I Gerantang". Besides, the topic 'kinds of activities in daily life' was taught through gamification with the story of "Manik Angkeran" and gamification with the story of "I Sugih and I Tiwas". Whereas, the topic 'things in surrounding' was taught using gamification with the story of "I Ketimun Mas" and gamification with the story of "Siap Selem".

Activity was the second step done in implementing the gamified Balinese local stories. According to Gros (2007), activity is the

process of implementing the gamification in the teaching and learning activity. Several activities had been done to pass this step. First, the teacher showed the gamification on the LCD. Second, the teacher began to open the gamification and run the story in it. Third, the story in gamification which contains text of the story, voice of the narrator, and various illustration was heard and read by the students. Fourth, some important points in the story emphasized by the teacher such as explaining word's meaning that the students might not understand, pointing out words or sentences which had relation with the basic competency, and emphasizing writing elements that appeared in the story. Fifth, after the story stopped, the game in the gamification started to be played by the students. There were various challenges involved in the game, including re-arranging scrambled letters, matching words with pictures, guessing animal's voice, and etc. The game has three levels and each level contains three sub-levels.

In the process of reading the story in gamification, as stated previously, the teacher guided the students to recognize the writing' elements such as the use of capitalization, punctuation, spelling, and word usage. The teacher pointed out some letters, words, or sentences which related to those components so that the students could understand better. The story contains some news vocabularies as well, so that it can affect the students' vocabulary mastery. Not only the knowledge of writing elements, but vocabulary mastery is also needed in mastering writing skill. This is related to what has been stated by Hedge (1998); writing requires simultaneous process of miscellaneous skills, including; the use of spelling, the use of punctuation, the use of appropriate vocabularies, and etc. Hence, vocabulary mastery is one of important parts that can help them in writing.

Discussion was the third step that had been finished. As stated by Gros (2007), since this step focuses on how the learning goals can be achieved by the students, it should be done by asking them to do exercises. To pass this step, the teacher gave the students opportunities to do exercises, so that they could think about the things they learned from the gamification.

Regarding the writing context, guided writing tasks which were created based on the story of the gamification were given in every meeting. In doing this task, the students were asked to write sentences and completed the blank space in a sentence with a proper word given.

From the result of the tests, the students could write in English better after being treated by using gamification. Some elements of the writing such as capitalization, punctuation, spelling, and word usage could be understood by them. By comparing their pre-test and post-test, it was proven that they did better performance in post-test after playing the gamified Balinese local stories.

The last step passed was reflection. Gros (2007) stated that the process of summarizing and concluding the learning material learnt in the learning activity through gamification is done in this step. In implementing this step, the teacher gave the students opportunity to share the things they had understood from the topic. They were also asked to find out moral values from the local story in the gamification. Since there are characters that exist in the story, the students could attain values from them. This made this activity was really meaningful and educatable for the students. It was in accordance to what had been stated by Indiarti (2017); local story was suitable to give to young generations because they can learn and understand about the norm existed in their society.

As what stated by Deese (2014), gamification is a medium that can insist the students' level of engagement in the class. This really happened during the implementation of the gamification in the class. In joining the learning activity, especially when they play the gamification, the students were very enthusiastic to do it. Even, before the class was begun, the repeatedly asked question was about which gamification that would be run at that meeting.

Based on the afore mentioned, the students' learning environment and their English writing achievement had been completely impacted by the gamified Balinese local stories. From the comparison of the pre-test and post-test score in the result of the analysis, it was found that the mean of the pre-test score was 51.73 and the mean of the post-test score was 85.39. It

indicated that after being treated through gamification, the students could gain better score in post-test. Further, by looking at the inferential analysis, the value of Sig. (2-tailed) was .200 (lower than the level of standard ( $\alpha$ =.05)). It means that significant difference between pretest and post-test happened. Based on such result and discussion. It can be concluded that there was significant effect of the gamified Balinese local stories on 5th graders' writing skill.

#### **CONCLUSION**

Significant effect of gamified Balinese local stories toward the students' writing skill had been attained after finishing the process of implementation. The learning environment was affected by the use of gamification as well. The students enjoyed to join the learning activity, specifically when they play gamification. Their enjoyment in learning had led their brains to understand material the Exceedingly, that enjoyment brought significant impact on their writing skill. The students could learn the writing elements better with gamified Balinese local stories. Their understanding toward the writing elements helped them to write in English well. The result of the study analysed empirically proved that gamified Balinese local stories gave significant effect on the students' writing skill.

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