

Gamifying Balinese Local Story: Facilitating Gen Z in Learning English

Putu Kerti Nitiasih¹, Luh Gd Rahayu Budiarta²

^{1,2}English Language Education
Universitas Pendidikan Ganesha
Singaraja, Indonesia

¹titiekjegeg@gmail.com, ²rahayu.budiarta@undiksha.ac.id

Ni Wayan Surya Mahayanti

English Language Education
Universitas Negeri Yogyakarta
Yogyakarta, Indonesia

ni0018pasca.2019@student.uny.ac.id

Abstract— Working with nowadays children, technology cannot be neglected to be involved in their learning. Gamification in education becomes very popular as one of the most effective methods in facilitating students' learning. Inserting gamification elements in Balinese Local Stories was the purpose of this R&D research. In order to develop a gamified Balinese local story, the ADDIE model was used. As a result, 5 stories had been developed in the form of application with the insertion of gamification elements, like points, badges, levels, and leaderboards. The products had been judged by ICT media expert and educational material expert. Based on the result of expert judgment rubrics, the products were categorized as excellent application. As an implication, these media can be used to facilitate students in learning English.

Keywords—gamification; balinese local story; gen Z.

I. INTRODUCTION

Digital native students are learners that already being in touch with technology that born between 1995- 2012 or we can call it as Gen Z [1]. Most of students in this era always keep in touch with technology in their life. Nowadays, most of the children are already used to technology development. They use their phones to browse any information on the internet, playing games, and using social media. The pre-observation was conducted in schools in Singaraja, Bali, and the result showed that 90% of the students were already used to technology. This situation makes the teacher have to improve their way of teaching to adjust with the digital native students' needs. Teachers in 21st century are expected to make innovative learning process in the classroom suitable with 21st century learning characteristics which involve technology. One of the considerations is the selection of methods and media that are appropriate with the student's need. Gamification is one that can be used for the teacher to improve students' learning.

Gamification can be defined as a system from game-based design that can be applied in non-games context in the learning process to engage people and enhance their problem solving skill [2,3,4]. Gamification in learning is using the application of game design elements to learning activities [5,6,7]. Those elements that need to be considered in making

digital games, such as: (1) users: the participants of the game, (2) challenges/tasks: the performance or obstacles in the game, (3) points: the accumulation of the result, (4) levels: the stages of the user depends on the point they get, (5) badges: the rewards after completing the action or obstacles and the last (6) ranking of users: the achievement of the user.

Gamification has positive effects on the engagement of the students and can increase students' performance and motivation [8]. The use of gamification in learning can make the teaching and learning process become more competitive, fun, useful and efficient [9]. This is supported by some experts who stated that in the circumstances of education, gamification allows students to receive instant feedback about their progress in the classroom and acknowledgment of an accomplished task [10]. Besides, it offers the potential for greater engagement of students and motivation in the classroom [11]. Regarding to several definitions above, the researchers conclude that gamification is a method based on game concept and system to promote learning, improve students' motivation and make the learning atmosphere more attractive in the education field.

In this research, the researchers focused on how gamification could facilitate the students to learn English. Students in this era tend to be close with technology and teaching media, and they also need to improve along with the technology development. Gamification media that was used in the research is games based on Balinese local story. Balinese local story was chosen as the storyline because the learners could learn their own culture using local stories that they often heard or read. Gamification could make an interesting and fun learning media for young learners to learn English because it used game environment and helped with technology that could make them learn easier.

II. METHOD

The design of this research was a research and development (R&D). In order to develop a gamified Balinese local story, the ADDIE model was used [12]. The development of the application was made during five months. As a result, 5 local stories from Bali have been developed such as the story of Manik Angkeran, I Cupak lan I Gerantang, I Ketimun Mas, I Siap Selem and I Sugih teken I Tiwas. The preliminary observation had been conducted, which was continued by analyzing the situation and designing the

product. The product was designed and developed then tested by the expert using expert's judgment rubrics.

The participants of this study were elementary school students in SD Lab Undiksha Singaraja. The sample of this study was 25 students that were chosen by using a lottery. Those 25 students were then divided into 5 groups with 5 students in each group. The groups that were used as the sample in this research were given treatment using gamification media that was already developed by the researchers that based on a local story.

The instruments that were used in this research were pre-test, post-test, interview guide, and expert judgment. Pre-test and post-test were made based on the story that was used as the main story of the gamification media. The tests consisted of 10 questions and each question had 3 answer options. The data were collected through pre-test and post-test and would be analyzed using descriptive analysis.

III. FINDINGS AND DISCUSSION

A. Findings

This research had a purpose to develop gamification based on Balinese local story as teaching media for elementary school students. The researchers used the ADDIE model as the research's procedures in developing the media [13]. In the first step, the analysis of the situation was conducted, the result from the questionnaire stated that 90% of the students used a smartphone. The use of that phone was not optimal, they only used it to play social media or play game. Thus, we made a product where the students can play and also they learn something about it. This can make meaningful learning.

Creating the blueprint was the first step that the researchers did to design the product. The blueprint was created based on the result of the need analysis. Furthermore, the blueprint would be used as the construction to develop a mobile phone game. The game was developed into a game that used the Android Operation System. Generally, the specification of the game used minimum Android 5.0 (Lollipop) and RAM 1 GB to run the game. The next step after the researchers designed the blueprint was product development. In this study, the researchers were helped by a programmer that supported the development of the product of gamification based on Balinese local story. There were five stories developed, namely the story of Manik Angkeran, I Cupak lan I Gerantang, I Ketimun Mas, I Siap Selem and I Sugih teken I Tiwas. Figure 1 shows the appearance of these local stories in the gamification media. It took along 2 months to develop this game.



Fig. 1. Appearance of developed Balinese local stories

Furthermore, to improve the quality of the media, there were two types of expert judgment used in this research to test the product's validity and reliability. The first one was education expert judgment where it was used to evaluate the content or the material of the blueprint of gamification based on Balinese local stories. The second one was a media expert judgment to evaluate the product's quality. Through this judgment, the researchers would get suggestions and comments to develop the content or material consisted in the application.

The gamification provides storyboard for each Balinese local story. Moreover, it provides 3-4 levels for each story with 2-3 activities which should be completed by the students. Figure 2 shows the appearance of the game with an example of Balinese local story and its level also activity instruction.

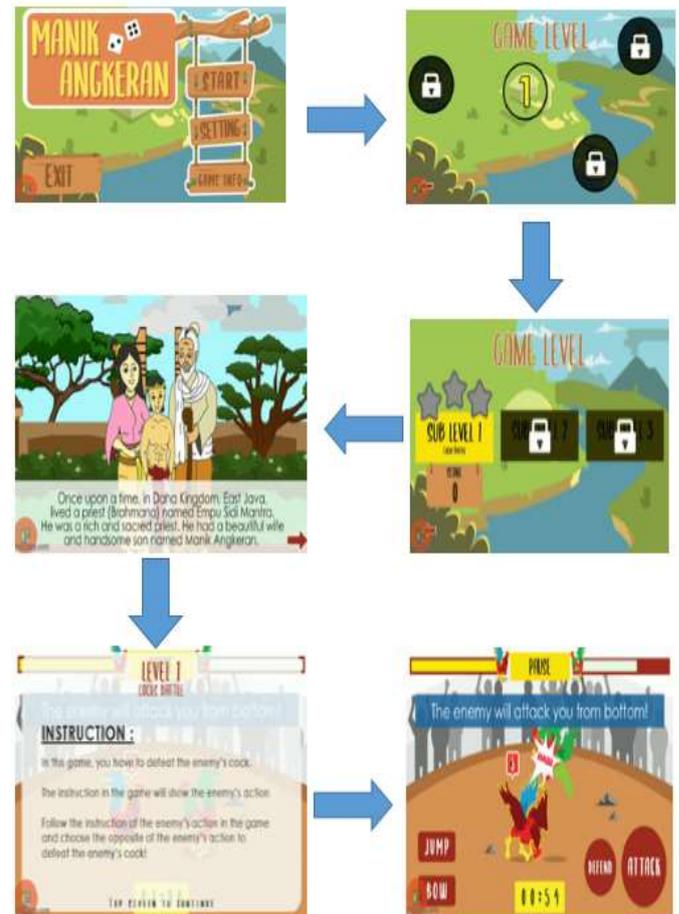


Fig. 2. One of the examples of the stories

Figure 2 above also shows the mechanism of the game itself. First, the students need to choose one Balinese local story, for example in figure 2 is Manik Angkeran. Then, the students will see four options named start, setting, game info, and exit. The students need to press start option in order to start the game. After that, the students will see three locked sublevels. The students should unlock each sublevels before continue the next level, therefore the students should press the first locked sublevel and clear the mission in it. The students will see the story first before clearing the mission. The story will give new knowledge to the students especially about the

Balinese local story chosen. Then, the students will see an instruction to clear the mission. The students should read and follow the instruction clearly in order to win the game. When the students finished the game, the students will get maximum three stars as feedback. Since the game provides story of the Balinese local stories developed, it becomes an interesting way to introduce the story to the students. Moreover, due the game uses English, it also becomes an interesting way to learn and practice English for the students. Furthermore, other elements of the gamification are shown in figure 3, 4, 5, 6 below.



Fig. 3. Example of mission in gamification media

Based on the figure 3 above, the gamification media will give instruction with some options related to it in order to clear the mission. The students should choose the most correct option based on the instruction given. Here the students will learn several things, for example vocabulary. Besides, it also shows the time and pause option. The time shows minutes and seconds left to clear the mission. Meanwhile, the pause option is used to pause the game, therefore the students can continue it later.



Fig. 4. Level and sublevel

Figure 4 above shows the level and sublevel in the gamification media. There will be 2-3 sublevels or activities in

1 level. It means the students should clear 2-3 sublevels in order to continue the game to next level. The students also get score and stars based on how well the students clear the mission in each sublevel. The maximum star that students will get is three stars. The students will get three stars when the students clear the mission perfectly.



Fig. 5. Storyboard

Figure 5 above shows one example of storyboard provided in the gamification media. Since the gamification media chose 5 Balinese local stories, the researchers believe that it is important to put story of each Balinese local stories. It aims at introducing and letting the students close to Balinese local stories. Besides, the researchers also believe that learning English does not mean the students are affected to forget the local stories. Balinese local stories itself have many moral values in it. Therefore, through the gamification media, the students will learn English together with moral values in Balinese local stories in interesting way.

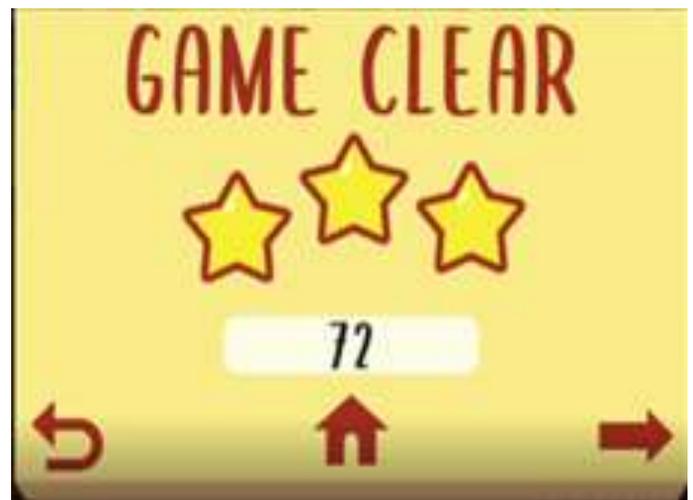


Fig. 6. Points and Stars

Figure 6 above is the appearance of scores and stars that students will get after they finish a mission. When the students are able to clear the mission, the gamification media will show the score and stars that they get. Meanwhile, when the

students are able to clear the mission, the gamification media will show no stars and no score. Besides, it also shows three other options. The left option means retry, if the students press the left option the students will play the same mission. This option is useful when the students cannot clear the mission at first try or when the students want to try the mission at other tries. The middle option means home, if the students press the option the students will go back to the home of the gamification media. The right option means next, when the students press the right option, the students will go to the next story with new mission.

Moreover, based on the result of expert judgment rubrics, the product was categorized as an excellent application. The score was 89 because most of the criteria of gamification were contained in the application. It means the gamification media developed by the researchers can be defined as a good media to teach English.

After that, the product was evaluated and tested to the students. The students played the game and they were given a test before and after it. The test was given before the students played the game named pre-test. Meanwhile, the test was given after the students played the game named post-test. The data collected would be analyzed using descriptive analysis.

The result of the pre-test and post-test showed a significant difference based on the mean measurement. The result of the pre-test and post-test could be seen in Table 1.

TABLE 1. RESULT OF PRE-TEST AND POST-TEST

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	25	2	8	5.6	1.912
Posttest	25	4	10	8.28	1.429
Valid N (list wish)	25				

Based on Table 1, the minimum score of the pre-test was 2 and for the post-test the minimum score was 4. Then the maximum score for the pre-test was 8 and for the post-test was 10. The mean of the pre-test result was 5.6 meanwhile the mean of the post-test result was 8.28. The result presented above showed significant difference between pre-test and post-test. It means the English ability of the participants was low, showed by the mean of the test result which was 5.6. Meanwhile, the English ability of the students was increasing, which was showed by the mean of the post-test which was 8.28. The test result above supported the result of expert judgments' rubrics that the gamification media was a good media to teach English, particularly for elementary school students.

Furthermore, based on the interview result, most of the students enjoyed to learn and play using a digital game provided by the researchers. Students also understood most of the language used in the media. The students was also motivated to learn English more after learning using a digital game. The students were also engaged more with their friends after learning using the digital games. The students tend to improve their way to learn using digital games and helped them to learn English innovatively.

B. Discussion

As stated in the findings, the students' motivation to be involved during the learning process could be increased through the implementation of a game in learning activities. It was because the students tend to study while playing. Game activity which used several media was often included by the teacher to support the learning process. Thus, the students' boredom in the class could be avoided through the application of the game. This is related to another studies, which stated young learners learn from hands-on physical activities [14]. Children should be given tasks that require them to be involved in hands-on physical activities like playing with physical objects or physical movement. Moreover, children have a short attention span. Children can hold attention only for around 15 to 20 minutes. Time allocated for each activity should accommodate children's attention span so that the children will not get bored [15]. Thus, the used of teaching media and creating a fun learning atmosphere was important.

Based on the result of the students' questionnaire, most of the students already had their own hand-phone. The students usually used their hand-phone for several hours to play the games and access social media. Moreover, the students often used their hand-phone to play the game. Furthermore, several of game that the students' played used English as language instructions, and most of them understood to the meaning although the game used English as language instruction.

Gamification has been applied in several fields, including education. Gamification of learning is defined as the application of game design elements to learning activities [7]. Gamification strengthens important educational skills, such as problem solving, collaboration, and communication. Therefore, the researchers were interested to develop gamification media based on Balinese local story, which could be used as English teaching media for elementary school students. It was also supported that one of the local story's characteristics is mostly spread orally [16]. The story that used English was ever read or listened to by the students. Yet, there were still many students who did not know exactly the meaning. The researchers developed a teaching media in form of a mobile game based on Balinese local story. This is expected to preserve culture especially in Balinese folklore in a more innovative and fun form through gamified Balinese local story.

After the product already developed and judged by the expert, then the product was tested to the students. Based on Table 1, the result showed the significant difference between pre-test and post-test of the study, it was because at the beginning, the students only being prepared with their prior knowledge to the story of the digital game. In the pre-test, the mean score of the test was 5.6 and for the post-test, the mean score was 8.28. We can see that there was a comparison of the mean result of the pre-test and post-test. The standard deviation of the result also showed the value of the distribution of the data. The standard deviation of the pre-test was 1.912, which meant the pre-test score that appears a lot was between $5.6 - 1.912$ and $5.6 + 1.912$. Meanwhile, for the post-test score, the standard deviation showed a score of 1.429, it meant that the post-test score that appear a lot was between $8.28 - 1.429$ and $8.28 + 1.429$. The means gap

between pre-test and post-test results defined that there was an improvement from the students after learning using the game.

The pre-test and post-test that were being given to the students was a test with 10 questions and each question consists of 3 options. The material in the pre-test and post-test was the whole story of Balinese local story that already in the form of digital games. The pre-test was provided to know how well the students know about their own local story, especially in English because not all of the schools would teach about the local stories to students in English. Most of the students only remembered little things from the story that was provided in the game. The students said that they only knew some of the stories that were provided in the game. This was the reason why the gap between pre-test and post-test result was quite far.

The students could improve their English by using this application. The game was already provided with fun and enjoyable challenges that can make the learners enjoy playing the game. Each game has its own appearance to make the learners' having fun and not boring.

The games also provided challenges that were already adjusted for elementary school students' problem solving skill. It could make the students become easier to solve any challenges in the game. The instruction also made into the language that the students would be easier to understand. The storyline appeared in the game's storyboard also already adjusted to the elementary school students' language skills. This was the plus point of how the students could improve their English by using digital game the challenges and storyline already being adjusted into their level of knowledge.

The adjustment of the level of knowledge provided in the digital games was being the motivation of the students to study more because they felt that the digital game was made for them to learn English easily. The students also could learn about their culture more using the digital games because the main story that was used in the game was the stories that were quite close to their daily life whereas the story used were local stories that reflect their own culture.

The result of the test and interview of how digital games can help digital native students to learn English showed a significance difference before the treatment being given and after the treatment given to the students. The gamified Balinese local story could improve the students' English skills by providing a new and innovative way of learning.

IV. CONCLUSIONS

Based on the findings and discussion presented previously, it can be concluded that gamified local stories can help students to improve their English skills by providing a new and innovative way to learn English by themselves. The result of pre-test and post-test of the research showed significant difference between before and after the treatments were given to the students. The gamified local stories can also improve the motivation of the students because they can have a new environment to learn language especially in learning English. Students do not only learn about language but also their own culture that is reflected in the local story that is used in the game. From the local story contained in the game, the students can also entertain themselves and learn about character education, and social life learning that contained in the story. The result of this study is expected to be able to provide

knowledge for teachers about the application of gamification in learning. This is also expected to improve professionalism in an innovative, creative, and fun learning process. For student, it is expected to be able to encourage students' motivation and to be active in learning as well as supporting them to learn English through gamification application. This research is also expected to give a distribution of the media for the prospective teachers as additional material in teaching. Through the media, it is also expected to give new insight for the prospective teachers in implementing gamification. As an implication, these media can be used to facilitate students in learning English.

ACKNOWLEDGMENT

The authors of this research would like to express their gratitude to The Ganesha University of Education Bali Indonesia which supports this research. They are also very grateful toward the commitments of the teacher and students during the implementation of the program. All are highly appreciated.

REFERENCES

- [1] Stillman, D., & Stillman, J, "Generasi Z : Memahami karakter generasi baru yang akan merubah dunia kerja", Jakarta: Gramedia Pustaka Utama, 2018.
- [2] Kristiadi, D., & Mustofa, K. "Platform gamifikasi untuk perkuliahan", *IJCCS (Indonesian Journal of Computing and Cybernetics Systems)*, 11(2), 2017.
- [3] de-Marcos, L., Domínguez, A., Saenz-de-Navarrete, J., & Pagés, C, "An empirical study comparing gamification and social networking on e-learning". *Computers and Education*, pp 82-91, 2014.
- [4] Leaning, M, "A study of the use of games and gamification to enhance student engagement, experience and achievement on a theory-based course of an undergraduate media degree". *Journal of Media Practice*, pp 155-170, 2015.
- [5] Brull, S., & Finlayson, S, "Importance of Gamification in Increasing Learning". pp 372-375, 2016.
- [6] Muntean, C, "Raising engagement in e-learning through gamification". *The 6th International Conference on Virtual Learning ICYL Romania: University of Bucharest and "Babes-Bolyai" University of Cluj-Naapaoa*, 201, pp. 323-329.
- [7] Rabah, J., Cassidy, R., & Beauchemin, R, "Gamification in education: real benefits or edutainment?". 2018.
- [8] Seixas, L., Gomes, A., & de Melo Filho, I, "Effectiveness of gamification in the engagement of students". *Computers in Human Behavior*, pp 48-63, 2016.
- [9] Mert, Y., & Samur, Y, "Students' Opinions Toward Game Elements Used in Gamification Application". *Turkish Online Journal of Qualitative Inquiry*, 2018.
- [10] Kapp, K. M, "The gamification of learning and instruction: game-based methods and strategies for training and education". John Wiley & Sons, 2012.
- [11] Simões, J., Díaz Redondo, R., & Vilas, A, "A social gamification framework for a K-6 learning platform". *Computers in Human Behaviour*, 2013.
- [12] Richey, R., Nelson, W., & Klein, J. *Developmental Research*, 2004.
- [13] Tegeh, I., Jampel, I., & Pudjawan, K, "Pengembangan buku ajar model penelitian pengembangan dengan model ADDIE". *Seminar Nasional Riset Inovatif IV*, 208-216, 2015.

- [14] Musthafa, B, "Teaching English to young learners in Indonesia: essential requirements". *Educationist Journal*. Volume 4, Number 2, pp. 120-125, 2010.
- [15] Sukarno, "Teaching English to Young Learners and Factors to Consider in Designing The Materials. *Jurnal Ekonomi & Pendidikan*, Volume 5 Nomor 1, pp 57-73, 2008.
- [16] Achmad, & Satinem, Teaching Materials Model Folklore in Learning Indonesian Based On Thematik Approach. *International Journal of Language Education and Culture Review*, Vol. 1 (2),DOI:doi.org/10.21009/IJLECR.012.03, pp 27-34, 2015.