

APPLICATION OF GAMIFICATION IN ETHNIC EXCELLENCE-BASED CHARACTER EDUCATION PROGRAMS

Ade Hodijah

Department of Computer and Informatics Technology, Politeknik Negeri Bandung
Jl. Gegerkalong Hilir, Ciwaruga, Kec. Parongpong, Kabupaten Bandung Barat, Jawa Barat 40559
e-mail: ade.hodijah@polban.ac.id

Paper received: 2022-10-12

revised: 2022-10-31

accepted: 2022-11-21

Abstract: This paper describes how the game is a tool to support the strengthening of character education for its users. In implementing the Independent Learning Education, Merdeka Campus, Bandung State Polytechnic, collaborated with the industry to apply gamification to the concept of character education and the nation's cultural values. Some of the objectives of this gamification activity are: (a) Getting the ethnic group's information; (b) Providing users inspiration to develop themselves; (c) Growing a better direction mindset. The game developed is a web-based application (online gamification), so as many students/students and lecturers as possible can use the game to support strengthening character education and the nation's cultural values. The manual version of the video game content (prototype) is available, namely the 2021 research output containing Pancasila character content based on ethnic excellence. The elements of educational content in online gamification contain the results of identifying the prominent characters of 10 ethnic groups in Indonesia with the largest population (Dayak, Madura, Jawa, Sunda, Baduy, Batak, Banjar, Minahasa, Betawi, Minang). This study used three approaches which are Qualitative-Explorative, Qualitative-Descriptive, and Evaluation. The method used to know how gamification was implemented in character education and the nation's cultural values. It is hoped that gamification can integrate into the learning process for compulsory national subjects. Thus, students can become users and a market for the gamification industry.

Keywords: Character education, Gamification, Ethnic excellence

Abstrak: Paper ini menjelaskan bagaimana *game* mendukung penguatan pendidikan karakter bagi penggunaannya. Dalam pelaksanaan Pendidikan Belajar Mandiri, Kampus Merdeka, Politeknik Negeri Bandung bekerjasama dengan industri menerapkan gamifikasi pada konsep pendidikan karakter dan nilai-nilai budaya bangsa. Beberapa tujuan dari kegiatan gamifikasi ini adalah: (a) Mendapatkan informasi suku bangsa; (b) Memberikan inspirasi kepada pengguna untuk mengembangkan diri; (c) Menumbuhkan pola pikir ke arah yang lebih baik. Game yang dikembangkan merupakan aplikasi berbasis web (*gamification online*), sehingga sebanyak mungkin peserta didik/mahasiswa dan dosen dapat menggunakan game tersebut untuk mendukung penguatan pendidikan karakter dan nilai-nilai budaya bangsa. Tersedia versi manual konten video game (*prototype*) yaitu keluaran penelitian tahun 2021 yang berisi konten karakter Pancasila berbasis keunggulan etnis. Unsur konten edukasi dalam gamifikasi online berisi hasil identifikasi karakter dari 10 suku bangsa di Indonesia dengan jumlah penduduk terbesar (Dayak, Madura, Jawa, Sunda, Baduy, Batak, Banjar, Minahasa, Betawi, Minang). Penelitian ini menggunakan tiga pendekatan yaitu kualitatif-eksploratif, kualitatif-deskriptif, dan evaluasi. Metode digunakan untuk mengetahui bagaimana gamifikasi diimplementasikan dalam pendidikan karakter dan nilai-nilai budaya bangsa. Diharapkan gamifikasi dapat diintegrasikan ke dalam proses pembelajaran mata pelajaran wajib nasional. Dengan demikian, mahasiswa dapat menjadi pengguna dan pasar bagi industri gamifikasi.

Kata kunci: Pendidikan karakter, Gamifikasi, Keunggulan Etnis

1. Introduction

The main need for learning methods in the Independent Learning system is students'

mastery of new literacy (Yamin & Syahrir, 2020). One of the learning methods used is Blended Learning, which combines offline and online learning methods (Rao, 2019). Gamification in the field of education (education game) (Marisa et al., 2020) is one of the innovations in the learning process that applies the concept of Free Learning Education. One application of gamification or an interesting game approach in the learning process is needed to motivate students to learn and strengthen character education. One application of gamification or an interesting game approach in the learning process is needed to motivate students to learn and strengthen character education.

The purpose of character education based on national education standards is to form students with noble character (Pemerintah et al., 2005). Furthermore, strengthening character education ensures students have a Pancasila spirit (Karakter, 2017). Therefore, research related to character education on learning content in schools, in this case, the Bandung State Polytechnic, has been carried out for one year (2020-2021) with research outputs in the form of handbooks for participants/players and handbooks for tutors/lecturers as shown in Picture 1.

Picture 1. Research product output in 2021 (C. M. Lasambouw et al., n.d.)



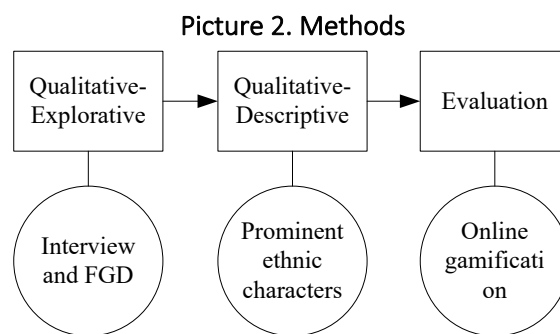
The 2021 research product is available in the form of video games which are still manual versions in the form of a handbook containing Pancasila character content based on ethnic excellence (C. M. Lasambouw et al., n.d.). Therefore, the implementation of strengthening character education is expected to support the Merdeka Learning program, Merdeka Campus, and Bandung State Polytechnic with the anticipated impacts of this research, namely: (a) The industrial world has the opportunity to cooperate in mutualism with universities, which will increase trust in partnering in various other activities. In addition, research output products managed by partners can improve the partner's economy. (b) Polban collaborates closely with industry partners regarding developing interactive and innovative gamified learning media that will enrich and motivate students to study harder. In addition, Polban will increase the number of IPRs from research output products. Minimum Copyright, (c)Other universities will be more motivated to develop various forms of technology-based learning media, not limited to character education, but also to strengthen complex subjects such as mathematics, (d) Students will be happier and more motivated to learn about Pancasila as the ideology of the state and nation. It will bring up the character of self-confidence, tolerance, cooperation, love for the homeland, and innovation. Students who are directly involved in research activities will have an impact on increasing motivation to be creative and innovative in finding solutions to problems in society.

Based on the description of the background, problems, and impacts above, this study aims to determine how the application of gamification strengthens character education. The virtual learning method approach from Blended Learning (Yamin & Syahrir, 2020) referred to in this study is through a web-based online gamification application, so the learning process is expected to be more flexible. The objectives of this gamification activity are:

- Get to know various cultures in Indonesia.
- Get to know the 10 ethnic groups with the largest population in Indonesia.
- Understanding the ethnic advantages of each tribe.
- Giving users inspiration to develop themselves along with the course of gamification activities.
- Able to change the mindset to grow in a better direction.

2. Methods

This research stage begins with a detailed identification of industrial needs related to character development for gamification products. Then, data were obtained through in-depth interviews with partners to find the character education in the gamification industry, in-depth interviews with partners were conducted. Next, the Research Team and industry partner teams determine the research output targets, the content of engineering media, and what scenarios will be developed through Focus Group Discussions (FGD), especially concerning the prominent characters of the ten most populous ethnic groups in Indonesia. Furthermore, the results of the FGD agreed on a list of online gamification product capabilities that a team of industry partners will develop. Finally, the online gamification product, one of the outputs of this study, was tested with users, namely students and lecturers at the Bandung State Polytechnic, by filling out questionnaires. The results of user product trials are used to improve research outcomes, namely online gamification products to strengthen character education based on ethnic excellence. The three approaches are shown in Picture 2.



3. Results and Discussion

The study results are described within the scope of the discussion according to the following research methods.

3.1. Qualitative-Explorative

Based on the five main values of strengthening character education, character education is an effort that is designed and implemented systems to help students understand the values of human behavior related to (1) religion; (2) nationalist; (3) independence; (4) working together; (5) integrity (Ana Ir Handayaningsih, 2013), (Kemdikbud, 2019). The movement for strengthening character education in this study is class-based, namely (Kemdikbud, 2019):

- Integrating the learning process in the classroom through curriculum content in subjects, both thematically and integrated.
- Strengthen classroom management, choice of methodology, and evaluation of teaching.

- Develop local content according to regional needs.

The learning process in question uses a blended learning approach with a teaching methodology through online gamification to strengthen character education. The online gamification in this study aims to provide discussion time for fellow teams and choose the correct answer, test the user's honesty and situation themselves in the condition of the gamification activity and then act appropriately. Based on these objectives, the application was developed using RPG Maker MV (RPG Maker MV Tutorial, n.d.). It is because of the need for a PC to be screen-shared. In addition, the development of an asynchronous smartphone application is also needed as a parameter to test user honesty. These parameters will have simple features, such as adding and subtracting variables using a smartphone. The technological scenario of this gamification is shown in Picture 3.

Picture 3: Technological scenario of the gamification

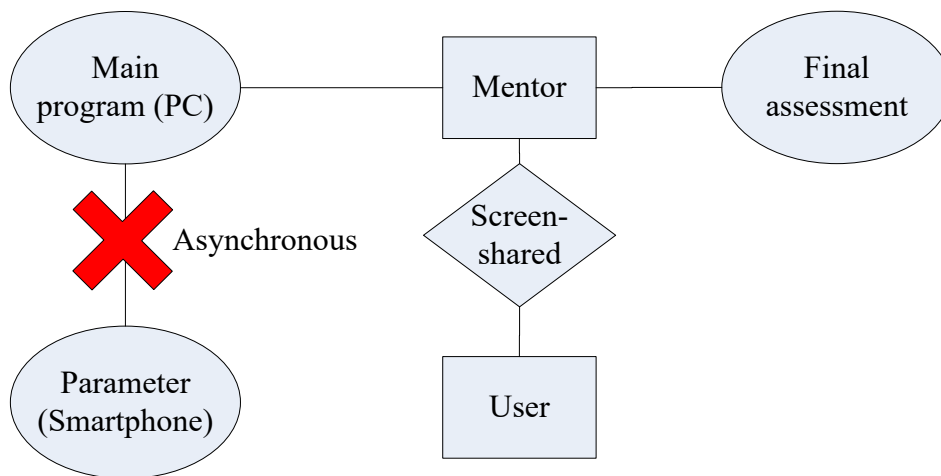


Table 1 is a SWOT analysis of the selection of RPG Maker MV in making this online gamification. Some targets for the application of character based on ethnic excellence in the learning process (C. Lasambouw et al., 2022) are included in the group of personality development courses (C. M. Lasambouw et al., n.d.) and Pancasila Education (PKn) courses (C. M. Lasambouw & Mathilda, 2020). The local content in question is ten ethnic groups in Indonesia with the largest population, namely ethnic groups: Dayak, Madura, Jawa, Sunda, Baduy, Batak, Banjar, Minahasa, Betawi, Minang (C. M. Lasambouw et al., n.d.), (C. Lasambouw et al., 2022). In addition, three tribes (Jawa, Sunda, and Minangkabau) of ten characters in (C. M. Lasambouw et al., 2020) have been identified. The following are the ten dominant characters possessed by ten ethnic groups in Indonesia based on these ethnic advantages, namely: (1) honest/frank; (2) hard worker; (3) likes to work together; (4) religious/religious; (5) brave; (6) loyal/loyal; (7) immigrants; (8) firm; (9) sincere; and (10) friendly (C. M. Lasambouw et al., n.d.), (C. Lasambouw et al., 2022).

Table 1. SWOT analysis of RPG Maker MV

<p style="text-align: center;">STRENGTH</p> <p>The program has the required features such as: making impactful choices, calculating variables for user scores, creating offline parameters, and more. In addition, working with RPG Maker MV is even more efficient because RPG Maker MV has an easy-to-use code structure that speeds up the creation process.</p>	<p style="text-align: center;">WEAKNESS</p> <p>Not efficient for mobile/smartphone. Several features in a PC (Computer) that a smartphone cannot read—the instability of the video through the program on both PCs and smartphones. The solution, the application provides more specific features for smartphones to play. For example, the app was playable.</p>
<p style="text-align: center;">OPPORTUNITY</p> <p>Users are expected to be interested in learning and easily understand the lessons given because, lately, gamification has become something many people are interested in.</p>	<p style="text-align: center;">THREAT</p> <p>Users have the opportunity to commit dishonesty while playing. Therefore the application provides answer keys and a final recap for examiners.</p>

The following are the characteristics based on the advantages of 10 ethnic groups in Indonesia (C. M. Lasambouw et al., n.d.), (C. Lasambouw et al., 2022) as shown in table 2.

Table 2. Identification of excellent characters

Dayak	Madura	Jawa	Sunda	Baduy	Batak	Banjar	Minahasa	Betawi	Minang
Patient	Religious	Militant	Cheerful	Abstain from harming others	Assertive	Loyal friend	Religious	Socialist	Nomads
Preserving culture	Independent	Consistent	Embrace	Obey the law	Migrants	Like to trade	Discipline	Cultural practitioner	Simple
Honest	Expressive	Loyal	Gentle	Collaboration	Resilient	Religious	Mutual cooperation	Sincerely	Hard worker
Sincere	Upholding self-esteem	Assertive	Respect	Preserving the natural heritage	The golden voice	Empathy	Honest	Easy to get along	Straight-forward
Toughness	Be brave	Willing to	Friendly	Democratic	Honest	Gentle	Fair	Polite	Egalitarian

		sacrifice					
Consistent	Migrant	Obey	Humble	Independent	Consistent	Loyal	Love to sing
Be persistent	Confidence	Upholding self-esteem	Easy to get along	Honest	Never give up	Forgiving	Strong brotherhood
Resilient	Straight forward			Sincere	Strong		To be responsible
Fair	Frankly			Assertive	Toughness		
Be brave				Loyal	Mutual cooperation		
Keeping promises				Upload-ing their customs			

3.2. Qualitative-Descriptive

The understanding of gamification includes using game elements to solve problems other than games (Faiqah et al., 2019) so that the learning process becomes interesting (Rahimah Wahid, 2019) to increase motivation (Marisa et al., 2020), (Ardiana & Loekito, 2020). Several studies related to character education have been carried out, including the application of gamification (Seva & Siga, 2022), (Syaefullah & Huda, 2021), teaching and learning processes using applications in the cloud, such as Kahoot (Faiqah et al., 2019), (Bicen & Kocakoyun, 2018), (Annasaii Jamar & Mohd Aderi Che Noh, 2021) and Quizziz (Sanchez et al., 2020), (mei et al., 2018) or develop their web-based applications (Fitriati et al., 2021) to support specific teaching and learning (Arif & Rosyid, 2019), (Ngadengon et al., 2021). For users to access gamification products, the web application that has been made is deployed on a server and can be accessed via an internet connection at a certain URL address (Salsabila & Intani, 2019), (adhi, 2020).

A gamification concept is developed by referring to the prominent ethnic characters that have been identified (C. M. Lasambouw et al., n.d.), (C. Lasambouw et al., 2022). The gamification of "Knowing Superior Characters and Culture of the 10 Ethnic Populations in Indonesia" is a unique form of learning tool that will give new nuances to its users. The article will find many fresh concepts that can indirectly trigger users to learn content. Hopefully, it will change the way of thinking in everyday life outside of this gamification activity. A Visual Novel style is used to show personal characters in the gamification activities.

In this gamification, a new feature of the online meeting activity style was developed and applied. Mentor prepares the Online Meeting Application and shares it on the monitor screen for all users. All users have manually prepared parameters by installing the application on a cellphone or similar device. First, users will watch the story shown on the screen belonging to the mentor that will be shared (users are not in 1 room). Next, the user performs a response that is prompted on the screen. Types of responses the user can ask during gamification:

- Parameters. The user acts by shifting the value on the attribute on the parameter board. There are two attribute models: Action point and Stress Level.

- Attitude Scale. The user and the mentor choose actions. It can be done in small groups as well as individually. However, this choice of action is very likely to affect the storyline and the outcome of the gamification activity. So it must be discussed (for the group), determined, and chosen carefully.
- Storyline Selection. The choice of the storyline can also be something that users have to decide, either individually or in groups. In line with the choice of action on an attitude scale, the choice of the storyline can affect the outcome of gamification activities. The choice of story path can also be an event that will affect the rise and fall of attributes whose value is non-negotiable.
- Selection of Story Places. The choice of the destination will also be the subject of discussion or even individually chosen in this activity at certain times or events. There are times when the choice of this place affects the storyline. There are also found as choices only.

Finally, mentors can check the results of the screenshots sent by the user by matching the gamification results that are recorded automatically in the mentor's application (provided in the mentor's application with a separate menu "REKAP RESULTS").

The concept and storyline in gamification are adapted to the current pandemic situation, where many people meet and discuss things with the help of online applications such as GoogleMeet, Zoom, Webex, Discord, and so on. Likewise, in this study, mentors need the help of a PC to access this gamification. There is a feature to share the image display from the mentor's PC screen to participants as users through the help of online meeting applications. Participants, as players, can use mobile phones or other similar devices to access. Here are games design document of gamification as shown in Table 3.

Table 3. Element of game design document



GAMES DESIGN DOCUMENT	
CHARACTER DEVELOPMENT BASED ON ETHNIC	
OWNER	: WINNIE YORIN
VERSION	: 0.1.0
DATE	: 2 nd July, 2022
REVISION	: FIRST DRAFT
1 EXCELLENCE GAMIFICATION ACTIVITY CONCEPT	
Genre	: Modern Visual Novel and Mini Games (semi-online)
Number of Users	: 10 with 1 Mentor
Duration of Activity	: Session I KNOWING ETHNICITY AND CULTURE approximately 60 minutes
	: Session II CHARACTER DEVELOPMENT BASED ON ETHNICAL ADVANTAGE
User Category	: approximately 120 minutes
Gender	: User Category Male/Female

The players will learn various superior characters from ethnic groups in Indonesia. The game's focus is to form a team with members from various ethnicities who will make plans for community service activities in an area in Indonesia. Part of the storyline is shown in Picture 4.

Through this gamification, participants will be encouraged to strengthen and enrich their character, including the following, as shown in Table 4.

Character Building

The short storyline of the gamification activity "Knowing Ethnic and Culture"

In an academy building, we see our beautiful host named Angel. Angel is observing someone in the library building. A man named Billy looked confused because he got an assignment from his college to create a functional activity.

It turned out that Billy wanted to carry out a community service activity on an island that had received little equal distribution of technology and education, but what could be done was the need for team members and funds.

Angel rushed to ask Billy about his difficulties. Angel immediately tried to help Billy. With Billy's agility and Angel's flexibility in the first stage, they started recruiting team members. Several team members gathered on campus based on their observation and thoroughness.

Their search continued to the area outside the campus, finally gathering the ten team members with great difficulty.

They go to Angel's house and consult to determine the place of choice for community service. Social service activities include eradicating illiteracy and distributing used books suitable for use by children and other activities for the community. For this activity, many funds are needed, so they raise funds by making products in the form of cakes and selling them.

With their ability and competence, they finally managed to raise funds and get ready to do social service activities.

The story in the gamification "Knowing Ethnic and Culture" is supported by ten characters representing the ten ethnicities and can be chosen by gamified users.

11

Picture 4. The short storyline of gamification activities

Table 4. Element of script

<p>1. Character development based on ethnic excellence Snippets of stories or cases involving the importance of self-development in various aspects of life are seen in gamification activities. After using this application, users are expected to be able to change their way of thinking in making decisions and actions. It is not only seen in the gamification concept of "Knowing Ethnicity and Culture". This character/user development is based on ethnic excellence in gamification. It is expected to be an example applied in everyday life outside gamification.</p> <p>Its application, in reality, through gamification, can change the mindset so that there is an increase in the quality of character education in universities to build superior human resources to create a better life in society, both nationally and internationally.</p> <p>Furthermore, this application can be expected to remind and increase the sense of nationalism and Indonesian unity by optimizing the potential for special ethnic characters in Indonesia.</p> <p>2. Decision-making and initiative The gamification activity of "Knowing Ethnic and Culture" is very dependent on the decisions chosen individually or in groups of users. Both user groups and individuals will face various situations or cases requiring an answer. In the form of an action or attitude that must be taken as a measuring tool and used to assign a value to the object of behavior (attitude scale), this is not an option but must be done (cannot be skipped).</p> <p>3. Learn initiative with precise calculations There are times when users are allowed to show their initiative to come forward to provide answers and actions. Still, it is more than just an initiative to submit themselves. It needs critical and mature thinking because wrong actions can result in harm to themselves and or other groups of users.</p> <p>4</p>	<p>7. Learn to be honest with yourself and others Additional applications installed on cellphones or similar devices for users are not connected (unsynchronized) with the mentor's PC (host). The application is prepared so users can perform calculations manually through their devices. For example, participants will calculate the amount of money, action points, and stress level in their gamification activities by moving the parameter pointer. The mentor's PC will have a system that automatically calculates the amount of money, action points, and stress levels during the activity. The mentor will match these results at the end of the gamification activity. If, when doing a cross-check, the number of results that come out does not match, it means that there is a possibility that the user is dishonest in the gamification activity.</p> <p>Some of the attractions in gamification are features. It is because features can be one of the bridges between participants and gamification. The features that founded in this gamification are as follows:</p> <p>1. Character selection Ten characters will represent the ten ethnic groups with the largest population in Indonesia. Each user gamification will choose one of the characters in the "Knowing Ethnic and Culture" that are considered suitable for him. The selection is made by group discussion or by his own will. Each character has several competencies that are bundled in character by default. This competence is the hallmark of various ethnicities displayed in gamification. In its activities, this competence will be useful in solving cases or questions faced by users, either as a group or individually.</p> <p>2. Storyline selection In this gamification activity, users, either in groups or individually, will be faced with several choices of storylines. This storyline is free to choose according to the discussion results or individual choices, but keep in mind that the plot's choice will affect the activity's final result. Therefore, the results of several users' decision choices can affect the group's final results and vice versa. In addition, group decisions can affect the development of individual characters.</p> <p>6</p>
--	---

3.3. Evaluation

Some basic game mechanics elements of gamification in the teaching and learning process are badges, levels, leaderboard, virtual rewards or (awards), gifts (awards or prizes), and challenges (BOGDAN, 2019), (Uz Bilgin & Gul, 2020). Badges are markers for groups of players, levels are stages of the game, leaderboards are player ratings, gifts are prizes after completing certain levels, and challenges are game challenges so players can compete to be the best.

The following are five attributes of evaluating the results achieved by players. These attributes are essential gamification elements closely related to the character. In contrast, these attributes are vital and determine whether or not the individual character can continue the gamification activity or not.

- Gifts

There is Money as the gifts, which is a cost source in this gamification. It will increase when the group successfully recruits its members. The more group members' recruited money will continue to grow by itself. In addition to recruiting group members, there will be several events in the gamification activity that can increase the number money belonging to the group. Still, small live events also reduce the amount of group money. So money only applies collectively, not individually. In addition to the money attribute, the next thing that is also very decisive in this gamification mechanism is the Action Point. These are energy, namely points that must be present if the character wants to engage in gamification. So when this Action Point reaches "0" or runs out, nature can't take action at all, such as quitting the game. But, again, action Points only apply to individuals, not collectively.

- Challenges

Several questions contain related cases as the challenges, so if the answer choice is wrong, it will affect the total assessment of the continuing issues.

- Levels

Stress Level is a parameter that will permanently change up or down in this activity. The limit of the stress Level is 120 points. Once the user reaches that point, the character is declared sick and will lose one chance to participate in the next activity (if needed). Hospitalized and will lose one opportunity on the next move, but will reduce 50 stress points the next.

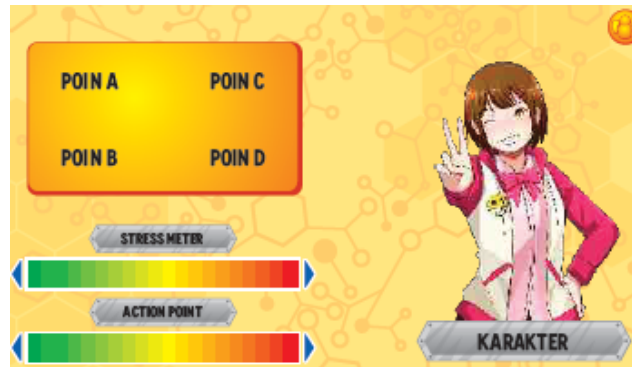
- Badges

Each player has the opportunity to unlock new competencies when the user can answer the questions asked correctly. Each character has a different possibility from other characters but will be calculated automatically by the computer.

- Leader boards

After finishing the game, the mentor can check the results of the screenshot sent by the user by matching the gamification results that are recorded automatically in the mentor's application (provided in the mentor's application with a separate menu "REKAP RESULTS"). Picture 5 is a display of the leader boards of this online gamification.

Picture 5. Gamification leader boards



4. Conclusion

The research found that, practical experience in applying national identity values based on excellent ethnic characteristics becomes essential to provide an objective picture/fact rather than an abstract picture. Practical learning will offer a pleasant understanding of goodness from other tribes while using the gamification of character education programs where each tribe has a prominent character as the community's identity. The introduction of prominent ethnic and cultural characters through gamification tends to be more easily accepted by students. The application of gamification in learning abstract subjects, which students need deepening understanding, will be very helpful in realizing "real imagination". The use of gamification provides a pleasant atmosphere in the learning process.

Acknowledgements

This work supported by the Research and Community Service Centre of Politeknik Negeri Bandung, Indonesia, CV Kreatif Media Grafika Level-09 and Matching Fund Vocation (MFV) 2022, Diksi.

References

- adhi, K. (2020). Konsep Teknologi Aplikasi Web. Bab I, 1–16.
- Ana Irhandayaningsih. (2013). Menyikapi Dekandensi Moral Di Kalangan Generasi MudlIrhandayaningsiha. *Humanika*, 17(1), 125–138. <https://media.neliti.com/media/publications/4995-ID-pendidikan-karakter-di-perguruan-tinggi-menyikapi-dekandensi-moral-di-kalangan-g.pdf>
- Annasaii Jamar & Mohd Aderi Che Noh. (2021). Gamifikasi Aplikasi Kahoot Dalam Pembelajaran Dan. Seminar Antarabangsa Isu-Isu Pendidikan (ISPEN 2020), January, 13.
- Ardiana, D. P. Y., & Loekito, L. H. (2020). Gamification design to improve student motivation on learning object-oriented programming. *Journal of Physics: Conference Series*, 1516(1). <https://doi.org/10.1088/1742-6596/1516/1/012041>
- Arif, R. F., & Rosyid, H. A. (2019). Pengembangan aplikasi web dengan gamifikasi sebagai media pendukung pembelajaran untuk mata pelajaran pemrograman dasar. *Tekno*, 29(2), 161. <https://doi.org/10.17977/um034v29i2p161-176>
- Bicen, H., & Kocakoyun, S. (2018). Perceptions of students for gamification approach: Kahoot as a case study. *International Journal of Emerging Technologies in Learning*, 13(2), 72–93. <https://doi.org/10.3991/ijet.v13i02.7467>
- BOGDAN, I. (2019). Gamification Applied in Computer Science Education: A Preliminary Approach. *Economy Informatics Journal*, 19(1/2019), 52–58. <https://doi.org/10.12948/ei2019.01.06>
- Faiqah, N., Hamid@Fauzi, A., Osman, M., Razali, S., Rahila, N., & Ibrahim, W. (2019). Student Engagement in Learning Software Engineering Subject using Gamification Approach: A Case Study. *Journal of Advanced Computing Technology and Application (Jacta)*, 1(2), 27–31.
- Fitriati, A., Anggoro, S., & Harmianto, S. (2021). Penguatan pendidikan karakter melalui pelatihan

- penggunaan aplikasi kindfull-digital character book. *Riau Journal of Empowerment*, 4(1), 29–40. <https://doi.org/10.31258/raje.4.1.29-40>
- Karakter, P. (2017). Perpres 87 tahun 2017 tentang penguatan pendidikan karakter.
- Kemdikbud. (2019). *Konsep dan Pedoman Penguatan Pendidikan Karakter Tingkat Sekolah Dasar dan Sekolah Menengah Pertama*. Kementerian Pendidikan Dan Kebudayaan Republik Indonesia, 8. <https://cerdasberkarakter.kemdikbud.go.id/?wpdmpro=buku-konsep-dan-pedoman-ppk>
- Lasambouw, C. M., & Mathilda, F. (2020). A Most Significant Change Approach to Evaluating E-Learning Outcomes: An Initial Study in Pancasila (Civic) Course. *198(ISSAT)*, 662–667. <https://doi.org/10.2991/aer.k.201221.106>
- Lasambouw, C. M., Nuryati, N., & Sutjiredjeki, E. (n.d.). *Penguatan Pendidikan Karakter Berbasis Keunggulan Etnis melalui Integrasi Kurikulum Pendidikan Tinggi pada Era Revolusi Industri 4.0*.
- Lasambouw, C. M., Sutjiredjeki, E., Nuryati, N., Bandung, P. N., Ciwaruga, D., Elektro, T., Bandung, P. N., Ciwaruga, D., Bandung, P. N., & Ciwaruga, D. (2020). *KEUNGGULAN ETNIK DI INDONESIA UNTUK MENDUKUNG PENGUATAN PENDIDIKAN KARAKTER : SUATU STUDI AWAL (The Advantages of Ethnics In Indonesia To Strengthen Character Education : An Initial Study) PENDAHULUAN Penguatan Pendidikan Karakter (PPK) merupakan kebi. Seminar Nasional Terapan Riset Inovatif (SENTRINOV) Ke-6*, 6(2), 480–487.
- Lasambouw, C., Sutjiredjeki, E., & Nuryati, N. (2022). Excellence Ethnic Characters in Strengthening the Country National Values Identity: An Experience of Indonesia. *Proceedings of the Annual Civic Education Conference (ACEC 2021)*, 636(Acec 2021), 1–7. <https://doi.org/10.2991/assehr.k.220108.115>
- Marisa, F., Akhriza, T. M., Maukar, A. L., Wardhani, A. R., Iriananda, S. W., & Andarwati, M. (2020). Gamifikasi (Gamification) Konsep dan Penerapan. *JOINTECS (Journal of Information Technology and Computer Science)*, 5(3), 219. <https://doi.org/10.31328/jointecs.v5i3.1490>
- mei, S. Y., Ju, S. Y., & Adam, Z. (2018). Implementing Quizizz as Game Based Learning in the Arabic Classroom. *European Journal of Social Sciences Education and Research*, 12(1), 208. <https://doi.org/10.26417/ejsr.v12i1.p208-212>
- Ngadengon, Z., Rahmat, F., & Mohd Zawawi, N. S. (2021). the Effectiveness of Gamification in Web Design Technologies. *International Journal of Modern Education*, 3(10), 48–61. <https://doi.org/10.35631/ijmoe.310004>
- Pemerintah, P., Indonesia, R., Standar, T., Pendidikan, N., Rahmat, D., Yang, T., Esa, M., Republik, P., Nomor, U., Nasional, S. P., Pemerintah, P., Pendidikan, S. N., Negara, U. D., Indonesia, R., Nomor, U. R. I., Nasional, S. P., Tahun, L. N., Lembaran, T., Nomor, N., ... Pasal, K. U. (2005). *PP 19 tahun 2005 tentang standar nasional pendidikan*. 1–54.
- Rahimah Wahid. (2019). Kaedah gamifikasi sebagai alternatif pengajaran dan pembelajaran dalam kursus berkaitan alam sekitar. *Journal of Education and Social Sciences*, 12(2), 50–53.
- Rao, C. S. (2019). Blended Learning: a New Hybrid Teaching Methodology. *Jrsp-Elt*, 13(May), 2456–8104. www.jrspelt.com
- RPG Maker MV tutorial. (n.d.). Retrieved October 4, 2022, from <https://rpgmakermtutorial.com/>
- Salsabila, F., & Intani, S. M. (2019). *Sejarah Web Service Beserta Arsitektur Dan Penggunaannya*. www.researchgate.net, March. https://www.researchgate.net/publication/339688153_SEJARAH_WEB_SERVICE_BESERTA_ARSITEKTUR_DAN_PENGGUNAANNYA
- Sanchez, D. R., Langer, M., & Kaur, R. (2020). Gamification in the classroom: Examining the impact of gamified quizzes on student learning. *Computers and Education*, 144(October). <https://doi.org/10.1016/j.compedu.2019.103666>
- Seva, K., & Siga, W. D. (2022). Penerapan Konsep Gamifikasi Nilai Filosofis Seni Reak dalam Pendidikan Budi Pekerti. 2, 61–68.

- Syaefullah, M. F. A., & Huda, S. N. (2021). Gamifikasi Pendidikan Akhlak Berbasis Visual Novel Untuk Siswa SD Kelas Rendah. Automata. <https://journal.uii.ac.id/AUTOMATA/article/view/19476%0Ahttps://journal.uii.ac.id/AUTOMATA/article/viewFile/19476/11549>
- Uz Bilgin, C., & Gul, A. (2020). Investigating the Effectiveness of Gamification on Group Cohesion, Attitude, and Academic Achievement in Collaborative Learning Environments. *TechTrends*, 64(1), 124–136. <https://doi.org/10.1007/s11528-019-00442-x>
- Yamin, M., & Syahrir, S. (2020). Pembangunan Pendidikan Merdeka Belajar (Telaah Metode Pembelajaran). *Jurnal Ilmiah Mandala Education*, 6(1), 126–136. <https://doi.org/10.36312/jime.v6i1.1121>