Employing game technology as positive influence on conveying positive message and train positive behavior: case study racism and tolerance issue

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Abstract. The usage of multimedia technology for education had long been performed. However, the practice usually restricted on the hard skill subject. For the soft skill subjects, it is important not to teach the subject straight forward to young people, since they might find it boring and unappealing. Hence game might be the right media to work on that matter. This research attempted to propose the usage of multimedia technology in the form of game application to teach about soft skill subject, that is about racism and tolerance issue. While the solution created evidently succeed to convey messages, its influence on correcting behavior cannot be fully confirmed.

1. Introduction

The rapid development in multimedia technology made it a decent tool to employ in many interests including in the area of education. Numerous researches had been conducted to prove the significant succeed of employing multimedia in education fields. The rich feature in multimedia technology offer plenty opportunities to be explored. The adoption of 3D model for example, not only escalate attractiveness and desire for learning, furthermore it could build a certain simulation features which give more lively description of the subject [1]. Additionally, the usage of multimedia technology features supports multisensory learning which create more efficient learning [2].

While the advantages of multimedia technology for education purpose had been discovered as proven by previous researches, its utilization fall more on the field of hard skill learning. This phenomenon fit with the strongest point of multimedia technology which create a better portrayal on even the abstract subjects. Thus, it is reasonable to employ multimedia technology to teach mathematic, newton laws, biology, chemistry, accounting, economy, and other science subjects.

Having said that, the opportunity to explore the usage of multimedia technology is still wide open, therefore this paper proposes to analyze whether multimedia technology could be employed in a soft skill education pack. Rather than use the rigid education application, game technology which offer more fun, attractiveness and interactivity, while at the same time give the impression to be less formal seems more suitable to deliver soft skill learning for young audience.

The subject picked for the case would be about discrimination and tolerance. Discrimination is actually a global issue which far from being resolved. A simulation on villain shooting had been conducted for the police officer and regular people to measure the sign of discrimination on the decision making [3]. The disturbing result show that people tend to associate a certain race to bad behavior though the police officer after spent more time to think it over still come to the right judgement at the end. In Indonesia, flourished by the existence of social media, certain events and occurrences indicate that discrimination is still a major problem here [4]. Therefore, this research

would try to examine the usage of multimedia technology to influence people towards discrimination matter.

2. Methodology

This research conducted by exploring the tendency of multimedia technology utilization in education field while elaborate the opportunities which rarely explored especially on the area of game development combine with education. Additionally, a survey has been conducted to obtain teenage and young people attitude on game playing as well as their tolerance attitude. The result would be applied to shape the education game proposed. Validation of the research would be conducted following the implementation phase.

3. Games as Education Media

Straight forward education pack in which an application bluntly throwing teaching material, simulation and some exercise is a popular media which make a use of multimedia technology for the learning purpose. While it is evident that this approach quite effective to boost learning curve on science subjects, it might not be the best approach for soft skill education, since soft skill is not thing that can be learnt by reading material and exercise on it. Soft skill subject is about shift of thought, the willingness to change and one could excel it through experience. The media which best suit these characteristics might be a game application since game always associated to excitement, thus audience would voluntarily play it and at the same time unintentionally learn the subject. Their experience in playing the game expected to shift the behavior and on the long terms will lead to excellence of conduct.

For decades, there had been debates among researchers on how damaging the influence of video games towards the active players. In 2010, Anderson and his team argue that violent video games intensify aggressive perception and manner while at the same time reduce empathy and prosocial conduct [5]. This claim has been disputed in 2017 when Hilgard and colleagues reanalyzing the research and try to minimize publication bias [6]. The conclusion of this research went to the other direction when they conclude that there is merely minor influence of violent video games on aggressive behavior. Whereas this claim again rebuke when another research used a different methodology to deal with publication bias and evidently accuse that violent video games still be a major concern for the society [7]. And yet another research report that there is no evidence support the claim of connection between aggressive level and violent video games for a decent exposure [8].

All those findings mostly concern on the negative aspect of video game, is video game especially the violent one would eventually lead player post behavior to be more aggressive and less compassionate. Albeit some exploration spot on the positive value generated during the video game playing activity, but usually the positive aspects only relate to the attentional and perceptual skills [9]. It is not surprising and very common due to the nature of every game itself which mostly demand full concentration. Another advantage mentioned refer to the nature of video game player to be able to learn anything related to the instruction on the action game which in return enhance the flexibility sense of the player as well [10]. Whereas Lueke and his colleagues make a hypothesis that violent video games not always bring negative aspects for the player, on the contrary they presume that it may raise heroic attitude which increase the eagerness to help other people depends on the story exposed on the game [11]. However, the research conducted cannot showing any evidence that support their hypothesis. These findings raise a research problem on how is the state of game technology that could be useful to convey good preaching and in return build positive behavior on its player.

4. Cooperativeness versus Competitiveness

Cooperative games by design considered give better influence for the player rather than competitive games. Cooperative games believed could evoke the altruist sense that make the game player likely act as a helping hand towards each other [12]. Even when the game is a violent video game, the cooperative manner could reduce the negative effects such as the aggressiveness behavior [13]. The reduction on the aggressive level surprisingly reach up to the same level as the non-player, that means a player of cooperative violent video games might have the same aggressive level with the one who is not playing the game. This phenomenon offers promising opportunity to resolve the problem of conveying a good message inside a game.

Having said that, cooperative games need more commitment than the competitive one, either a casual game or an online competitive game. Cooperative games demand all the group member involved and be there at the same time. The term AFK or away from keyboard give the sign of an

inactive player which sometimes bring a bad result for the team. In this case it would be simpler to adopt a competitive game to reach more player, while at the same time embrace the cooperative manner which would be attempted here.

5. Analysis and Design

A survey had been conducted to figure the audience's likeness on video game and their daily conduct regarding different races. Fifty respondents from teenage and young adult group of age participate on this survey. Regarding their preferences of game category, respondents requested to pick games they enjoyed the most, each respondent was able to pick more than one game if they find it hard to pick since they are both favorable. Their preferred games would then be categorized and separated. Based on this survey, the adventure game gain more favor with 48% respondent find it favorable. Casual and action gain the second and third favorably genre respectively with 42% and 36%. Regarding on their preferences of inner circle friends related with the race, 46& respondent apparently have a more than acquittance from a different race which might show the average level of tolerance. Having said that, the result should be elaborated more since there are not enough information regarding their reason of preferences.

The next phase would be to design an adventure games following the favorable genre picked from the previous survey. An adventure games need a good story, fortunately Indonesia's culture preserves plenty good legends, and one of them are suitable with the theme of discrimination and tolerance. The legend of Balingkang from the island of Bali tell the story of unacceptance races and cultures which lead to destruction. Another survey to the previous respondents conducted to inspect their familiarity with the story of Balingkang. It turns out only 10% respondents were familiar with this legend, another 20% stated that they have heard of it and another 70% never know about this legend. This legend has corresponding theme and a good conflict that make it suitable for the adventure game which will be developed.

There would be two importants chapter on the design phase, they are the assets design and the gameplay design. The assets designed should perfectly portray the cultures mentioned in the legend of Balingkang, that is Balinese and Chinese culture. Figure 1 show the design of a Balingkang palace which shows characteristic of Chinese culture combined with the characteristic of Balinese culture.

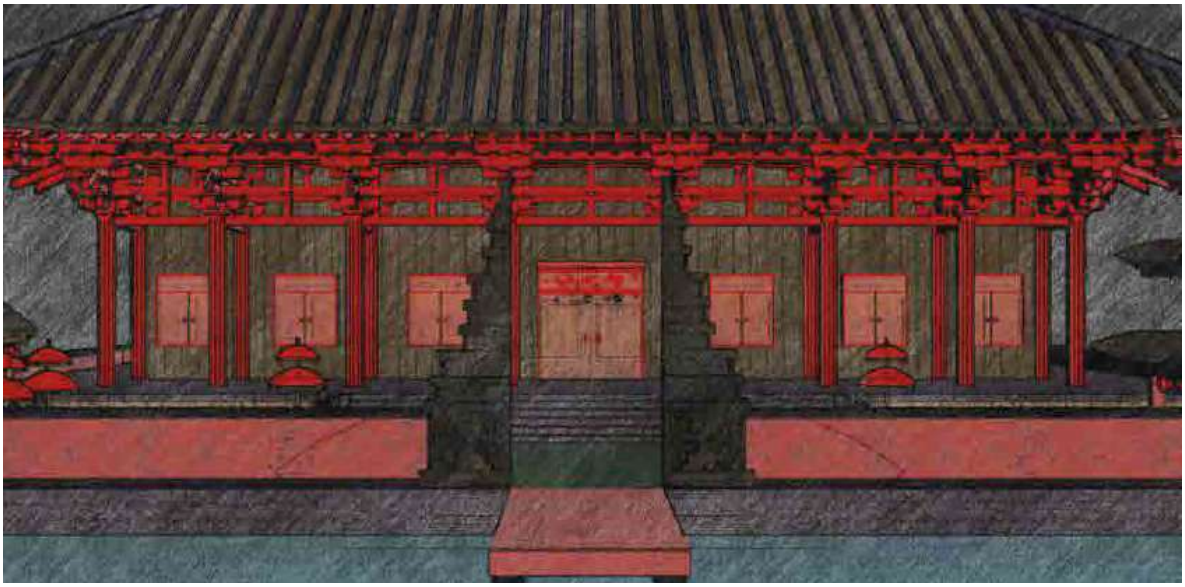

Figure 1. Balingkang Palace

The gameplay designed should both engaging and able to convey the message of diversity. This game is designed not as a cooperative adventure games, hence it should attain the cooperative manner. The cooperative partner would be created inside game to replace the original human partner. In order to convey the message, there are certain scene and task created inside the game. On the first level,

there would be a scene show a mother teach about diversity and tolerance to her child. On the next levels there would be scenes where player might need to finish task which cannot be done alone, or the player need to decide to help certain character or not. The game should push player to find partner and teach them to find appropriate partner not base on the race. There would be consequences on each decision and the consequences would appear immediately on the screen. These designs hopefully could convey the message and lead to attitude changing.

5. Implementation and Testing

The implementation phase started by creating the visual assets in 2D and 3D which then followed by putting them all together inside the asset folder to make them accessible from Unity since the game would be created using Unity. Figure 2 show a scene after the implementation taking place.

Figure 2. Game Legend of Balingkang

After the verification taking place, the result of the implementation would be validated by evaluate it to the teenage respondents. The respondents, without any explanation about the theme of the game and the morale messages required to play Legend of Balingkang until the last part or until the game is over whichever came first. Player behavior and decision were observed and analyzed to confirm the impact of this game on player's attitude toward different race. To strengthen the validation, after finishing their games, players were questioned regarding their experience and their opinion.

Regarding the assets design, most respondents could recognize the touch of Chinese and Balinese culture on the design. This result validates the succeed of the asset design which make a decent game objects that match the story.

On the parts where player requested to help some non-player characters (NPC), most of the players were willing to help regardless the race of the NPC. Only less than 25 percent players overlook the request. When questioning about such attitude, their answers show that they were in hurry and too excited to go to the next phase of the game.

On the other parts where player need to gathering people to help finishing a task, all respondents choose NPC from different races. Players stated that their only concern were about finishing the game, therefore they would pick the best NPC possible based on their strength and qualification without any regard about the race.

Since all respondents already show positive attitude toward racism, it cannot be measured whether the game succeeded to train positive attitude. However, when questioned about messages contemplated after playing the games, all respondents come up with a message about tolerance to diversity. This result might show that the gameplay created on this game had been succeeded to convey the message of tolerance. Moreover, since all the respondent stated that they would be more

tolerance on their daily life, even though the direct result of the usage of competitive game to create more positive behavior cannot be measured accurately, it is enough to say that game can be employed to convey a positive message and somewhat train the player to have more positive attitude.

5. Conclusion

In conclusion, while it is possible to employ the cooperative manner inside a competitive game to create a game which can be used to convey message and train the thought of the player, the direct connection between game training and behavior changing is still hard to be fully confirmed. However, the message about racism is positively accepted, therefore a game is an effective media to convey message and might lead to changing behavior. Further researches are required to fully confirmed the direct relation.

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