A prototype of serious game for lecturing simulation

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Abstract. Nowadays, students are one big assets of a university. A Student must be assign to several lecturing process for example study plan, lecturing, mid test, final test, etc. Therefore, some student especially new entry student did not understand whom the primary and secondary flow of lecturing and its terms. There are many ways to explain about lecturing plot into student, like put it on academic guide book, inform in official website, social media, and so on. Unfortunately, most of students are not aware it. The purpose of this work is to create a lecturing simulation game to interest student in order to understanding lecturing process. In limited test we ask several students to play this simulation game. The result, 80% of student get more knowledge about lecturing process.

1. Introduction
Lecture activities are learning processes which include face-to-face activities in class, practicum, organizing experiments and giving other academic assignments. In supporting the lecture activities, seminars, symposiums, panel discussions, workshops, and other scientific activities can be held. According to a survey that was concocted in a state university in Indonesia, we found that most students did not fully understand the lecture process they were currently taking. They do not understand what activities will be taken and what things should be prepared until they graduate. Regarding this matter, it has been clearly explained in the lecture handbook, but only a few students read and even though only a few students have understood it.

The purpose of this research is to make a simulation game about the lecture process. Currently developing games are for example: RPG (role playing games), simulation, real time strategy, adventure, and idle games [1-3]. Each type of game has advantages and disadvantages [4,5]. Simulation game is one of the most popular games, where a player can simulate and feel the conditions and events that are in the game [6-10]. The examples of products from this simulation game include: Sim City, Train Simulation, The Sims, Just Desert, etc.

Another study discussed the visual novel education aimed at sufferers of eating problems, also known as anorexia. The methods used are: determining specific targets, topics to be raised, linkages with objectives, making characters, making story plots, test stories, and making conversation patterns. The results of this study were respondents felt helped by this game. The disadvantage of this research is that the use of game platforms is only limited to the iPad and the content of one of the game endings that is too difficult [11].

The research on Hajj simulation uses Ren’Py on android devices. This research, describes the basic elements of game simulation, groove making patterns, and the standard design of game simulation. This journal raises the theme of hajj simulation in its application. The flow found in this simulation game is
a variety of steps or steps in carrying out the pilgrimage along with the prayers used during the pilgrimage [12]. Based on previous research, it can be concluded that the game can be used as an interesting learning media for students [13-18].

2. Design

2.1. Storyline

The storyline of this prototype is a series of images as a whole and describes a series of stories that are made to be understood by the user. The design of the storyline in lecture simulation games is as follows:

| Scene   | Description                                      |
|---------|--------------------------------------------------|
| Scene 1 | Main Menu                                        |
| Scene 2 | Intro Game                                       |
| Scene 3 | Conversation and introduction to other character |
| Scene 4 | Different plot                                   |
| Scene 5 | Different plot                                   |
| Scene 6 | PBAK                                             |
| Scene 7 | State 2                                          |
| Scene 8 | State 2(KRS phase)                              |
| Scene 9 | State 3(lecturing phase)                         |
| Scene 10| State 4(specific PBAK)                           |
| Scene 11| State 5(UTS phase)                               |
| Scene 12| State 6(UAS phase)                               |
| Scene 13| State 7(Ibadah, Tilawah, Tahfidz)               |
| Scene 14| State 8(KP)                                      |
| Scene 15| State 8(KKN)                                     |
| Scene 16| State 8(UP)                                      |
| Scene 17| State 8(Comprehensive)                           |
| Scene 18| State 8(Colloquium)                              |
| Scene 19| State 8(Munaqasah)                               |
| Scene 20| State 9(Graduate-ending)                         |

2.2. Game design

Figure 1 describe that first the player start game with introduction then the player chooses game scenario including some conversation. Next the player will find a branching. There is several branching will find during the player plays the game.

Figure 1. Game architecture.
2.3. Material collecting
In material collecting phase, this work designs several characters, background, back sound accordance to other components. The characters adopted from some students, lectures and the also the background. Fig 2 as describe main character 1 as a student. Fig 2 is Main Character 1’s friend. She described as a female student.

![Figure 2. Main character 1.](image1)
![Figure 3. Main character 2.](image2)

![Figure 4. Sample of background 1.](image3)
![Figure 5. Sample of background 2.](image4)

Fig 4 describe one of several outdoor background locations. This picture captured on one corner of the university. Fig 5 describe on several indoor background location. This is described main hall of the faculty building. These places commonly used by students in order to discussion, meeting, etc.

3. Result

3.1. Assembly and compilation
The material and assets merger that has been prepared previously is equipped with speech balloons, 2-dimensional images, and accompanied by background and background music. In the main view, here
the main characters interact with the environment and the appearance of the conversation can be seen in fig 6.

Figure 6. Sample scene of the game.

In this part of the selection, there will be a selection menu that floats in the middle of the layer and can be clicked to determine which choice to take. Once clicked, the selection menu will disappear from the layer and the story will continue according to the choices previously taken as described in Fig. 7.

Figure 7. Sample scene with several decision.

3.2. Limited test
This game has been tested by asking exactly 100 new students from many different departments to start play the game. The result, 80 of them interested and became more aware of the implementation of the lecture process from the first step to the introduction of academic culture to the process of final research
and graduation. In fact, an additional feature of this game is conducting a student character classification process using the C45 algorithm with a choice of attitudes and actions that the player enters as a determinant factor. At the end of this game, players will get some positive suggestions and directions in order to improve their motivation. Discussions regarding these additional features are presented in different articles.

4. Conclusion

According to limited test, this simulation game working properly. This game interested and improved new student's knowledge and awareness about step by step of lecturing process. However, this game has several limitations such as low graphical interface, a little scene and case and also limited character. Further work, we suggest to improve the number of scenes with more complicated case and add more various character in order to make this simulation game is almost real.

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