Game Making as A Collaborative Learning Method

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Abstract

Many game developers provide solutions for learning subject matters by creating games for students. The game products as the solution help the student to learn some topics. However, usually, the students are merely consumers of game products and they depend on the game developers to decide the game contents. In this paper, I will argue that students should be able to create their own game and at the same time, are they learn some knowledge. Several game authoring tools allow students who are not majoring in computer science to create their own game and learn a subject matter either independently or collaboratively. This paper will delineate the possibility of game making to be used as a collaborative learning method in the class.

Keywords: collaborative learning, game making, learning method, own topic, passion to learn

Introduction

Several studies on the use of computer games for learning activities showed that game can be an effective tool for learning. Each game has specific characteristics that match with the learning goals. The students learn important "future" things, from collaboration, to prudent risk taking, to strategy formulation and execution, to complex moral and ethical decisions (Prensky, 2006). The digital games provide visual information to one or more players, accept input from the player(s), and use a set of programmed rules (Oblinger, 2006). Thus, computer games are able to enhance the learning through visualization, experimentation, and creativity of play (Betz, 1995). The education institutions sometimes develop their own educational games to support their learning activities (Freitas, 2006). The demand of creating educational game has opened up opportunities in the game entrepreneurship (Sanjaya, Soekesi, & Sitohang, 2015). It will increase the dependency of school and other educational educations to the game developers.

In fact, game making is no longer complex activities because there are several games authoring tools are available for the common people. Students who have limited computer programming background can use them (Febriani, Ardityo, & Sanjaya, 2014). Several game authoring tools that are easy to are First Person Shooter (FPS) Creator, RPG Maker, Adventure Maker, Construct 2, and Game Maker Studio (Ciesla, 2017). The users only need to modify the characters and features. However, game making can be used for collaborative activities. In order to work well, game creators need to work with other people. The collaborative game making provides a model in which learners can work together to create something that is meaningful for them, giving them input for both the process and product, and facilitating the development of 21st century skills, such as digital literacy (Bermingham et al., 2013). Compared to the game playing, designing and developing the games could better address the needs of learners than simply playing existing games (Bermingham et al., 2013; Christanti, Sanjaya, & Murniati, 2017). Based on our workshop in 2016, students from Indonesia and USA had high interest in learning

and sharing their knowledge of a subject matter by creating a game. Their passion and interest can be an asset in learning methods development.

Game Making Workshop

According Abanador, a learning method is a systematic plan to achieve a set learning objectives through appropriate steps (Abanador, Buesa, L, & Mañibo, 2014). Game making as a collaborative learning method could be counted as one of collaborative learning techniques. The Computer-supported Collaborative Learning (CSCL) is a type of collaborative learning technique in which students can learn a subject matter with their peers using computers (Stahl, Koschmann, & Suthers, 2006). On the workshop, the steps of game making activities are 1) providing the game authoring software & game template, 2) modifying game template activities, 3) sharing knowledge through conversations in the game, and 4) compiling the game as a product for them other people. The steps on game making activities could be seen in Figure 1.

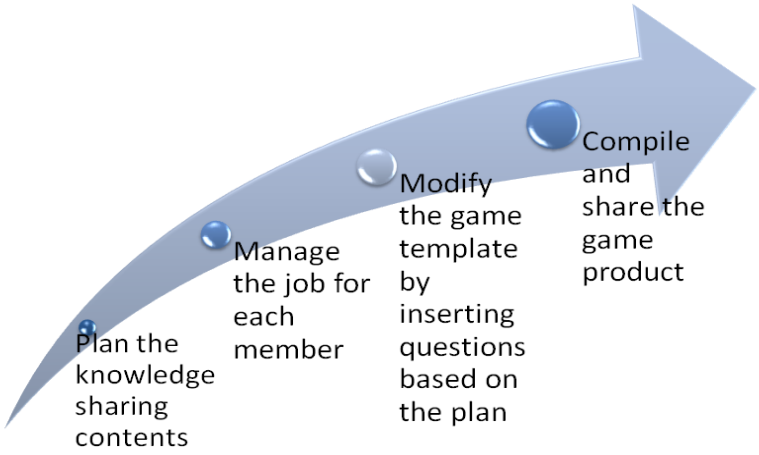

Figure 1. Steps of Game Making Activities

In the workshop, each group used a laptop and each member contributed their ideas to design the storyboards for the game. One person was in charge of the laptop. Students were asked to create a game where other people can use by focusing on a certain topic they were familiar with such as Power Ranger, literature, dramas, and many other topics of their choice. In the workshop, students also divided the task to make storyboards, modified the game template to suit their storyboards.

However, collaborative game making will work better if students are able to create their own task independently from another location. Using Dropbox might be one of the solutions. Dropbox allows students to save their files in the cloud storage so that others have access to the files and then work on their own task independently. In the RPG Maker case, the team member can modify their own part and specific map only. Otherwise, the game will crash.

Survey Results

After the workshop, the questionnaire was distributed to explore students' perception on the collaborative task of designing a game in order to create activities for classroom.

Table 1. The Survey Results

No	Question items	Means	Standard Deviation
1	How do you feel after you play the game?	4.3	0.6
2	How do you feel about creating the game?	3.9	0.7
3	What do you think about the level of the making of the game?	3.6	0.8
4	To what extent the template helps you create the game?	4.1	0.6
5	Do you agree that games can be used for collaborative learning?	4.2	0.7
6	Are you interested in creating a game for different course content?	3.9	0.8
7	What do you think about creating a game for learning?	4.1	0.8
8	Do you agree that a game meets your needs for learning a subject?	3.7	0.6
9	Are you interested in creating a game for collaborative learning?	3.6	0.8
10	Are you interested in sharing the game you have created?	3.9	0.7
11	Do you think the game you create is useful for other learners?	3.7	0.8
12	Do you agree that the games for collaborative learning are more appealing if they can be played on various gadgets?	4.2	0.6
13	How interesting are the characters in the game?	4.2	0.7
14	How interesting is the RPG game you just created?	4.1	0.6
15	Are you interested in creating other types of games for collaborative learning?	3.9	0.8

The survey result show that attitude towards the game usefulness for collaborative learning is significantly correlated with attitudes towards the usefulness of game for language learning (r=0.521).

However, some of the challenges on creating are found. The technical issues and their level of familiarity with game making is still a factor on the successfulness of this method. In addition, students only need more workshops to make them more familiar with the software. Another challenge is that the game authoring software cannot be used online (cloud-based). Students had to install the game. The technical challenges can be reduced if the computer laboratory provides the software in each computer. The students do not need to install the software for collaborative learning. They can use the installed software inside the computer laboratory. The computers should be linked to the Dropbox in order to be used for saving the files of collaborative works. The reducing technical aspects and focusing on the collaborative works will make them enjoy and fluent in the game making collaboratively.

The virtualization software such as Cameyo (cameyo.com) could be used to make the learning environment more portable. Schools can install the game authoring software, link the Dropbox, and save as Cameyo portable application. Students can use the portable application on their computer to have the same environment with the computer laboratory. However, Cameyo can only be run at its Cloud system. It needs to be further explored the capability to be used for cloud storage for game making.

Conclusions

As a learning method, game making requires systematic steps in order to be successful. The steps for collaborative learning method are planning the contents, managing the members' job, developing the game template, and compiling the game product

Overall, the findings suggest that students perceived the collaborative task and the game making positively. Many students had favorable responses towards the usefulness of the game to learn a subject matter. Even though a few students had difficulties with the technical aspects of creating a game, they viewed the task as very interesting and useful for them.

Virtualization software could be used in order to share the same environment with computer laboratory. Fewer technical problems and more focus on the learning method will make them enjoy and fluent in the collaborative game making. Further exploration related to the use of Cameyo needs to be conducted.

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