2.3. *Related Systems*

There is already an existing system that can be used to facilitate a jigsaw learning method. To review this, there will be three different systems that have been studied and tried.

2.3.1. JigsawBuddy

This research paper has been conducted by an MMU student named (Abdul, 2021) during his final year project for session 2020/2021. According to Abdul, he wanted to make a system where lecturer can use his system to facilitate a jigsaw learning method. He already proceeds the software development cycle and come up a brand new system called JigsawBuddy as shown in Figure 2-3 below.

Figure 2-3: Logo of JigsawBuddy

JigsawBuddy is a system where lecturer can manage a class, create, run a topic, access student's performance through individual assessment and some minor functions such as uploading learning materials and posting class's announcements. In this system, lecturer will first need to create a topic that consist of name, date and time, and the class that he or she specifically wants to run the topic with. The system can only accommodate minimum of four students or else lecturer unable to create a topic.

After that, lecturer can choose on what kind of difficulty to choose when forming an overall group formation for the jigsaw learning session as already shown in Figure 2-4. Last but not least, all the information and group formation will be display in the lecturer dashboard as shown in Figure 2-5. To start the jigsaw learning session, lecturer need to verify themselves with their credentials by entering their password.

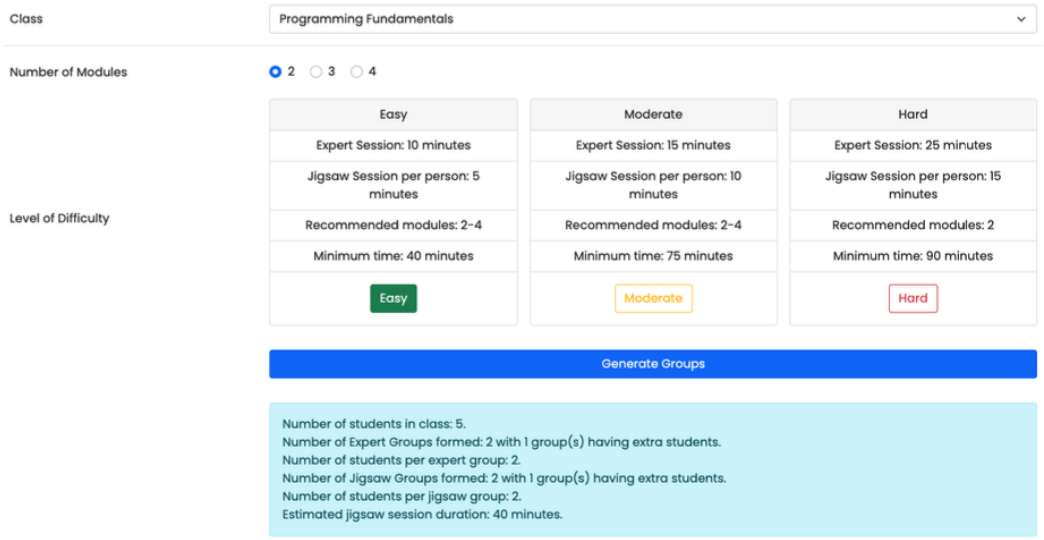

Figure 2-4: Interface of JigsawBuddy showing choosing the difficulty for the grouping formation

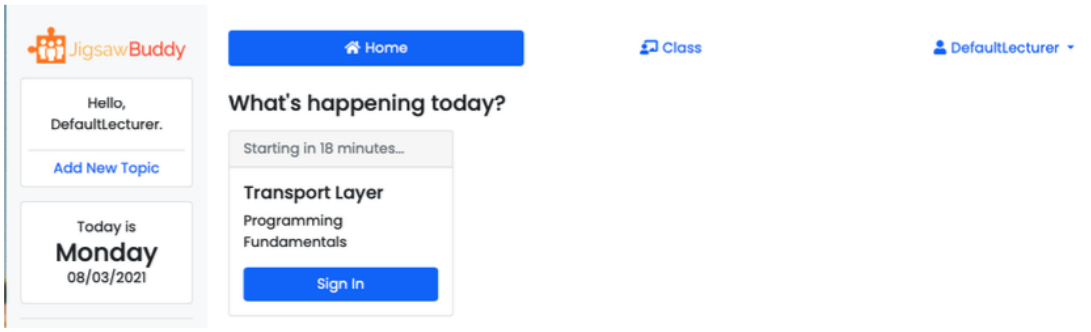

Figure 2-5: Interface of JigsawBuddy showing the generated group formation in lecturer's dashboard

JigsawBuddy also features a timer during a jigsaw learning session. The fixed timer will be set based on the difficulty which also shown in Figure 2-4. For example, the minimum required overall time for the jigsaw learning session for easy level is 40 minutes, moderate level is 75 minutes, and hard level is 90 minutes. During the expert and jigsaw session, there will be a timer that will indicate on how long students must finish their discussion or presentation as shown in Figure 2-6.

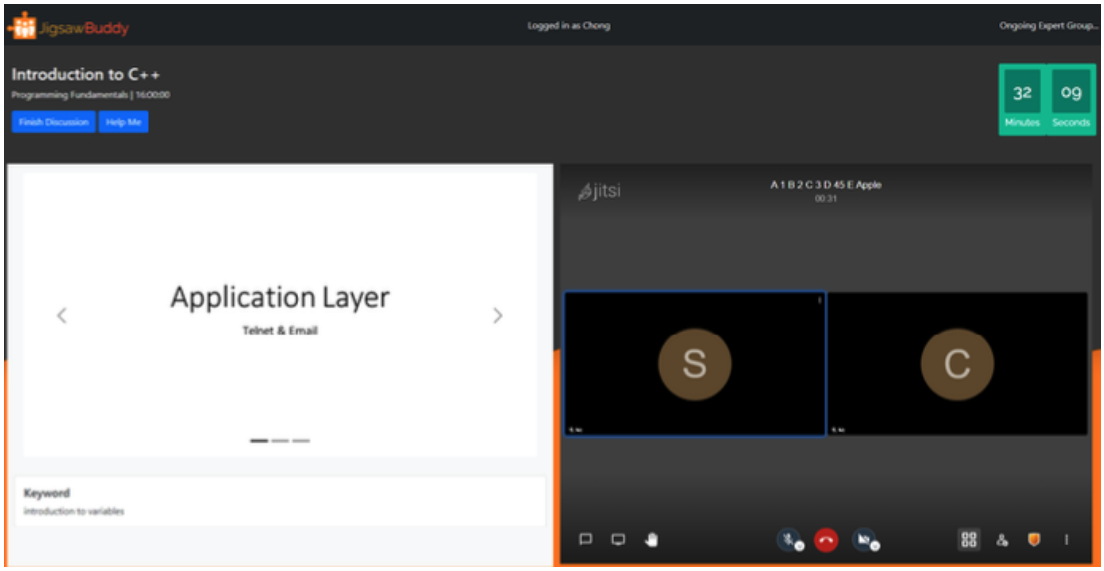

Figure 2-6: Interface of JigsawBuddy showing one of the learning activity during jigsaw learning session

However, there is something that is not perfect needed to be highlight about JigsawBuddy. First of which, is that JigsawBuddy can only group the student randomly without any preferences. This means the grouping feature available will not accommodate students' diversity in terms of gender or academic performance. Other

thing is that lecturer cannot modify the time given by the system from the beginning. Lecturer can only use the time given by the system for the jigsaw learning session

2.3.2. Team Picker Wheel

A random team generator called Team Picker Wheel was created by (Picker Wheel, 2020). The ability to divide a list of names into teams or groups is helpful. It can also be used as a random partner generator or as a random group generator.

This system is fairly easy to use. The user needs to insert names into an input box. After the user put a few names into the input box, user can modify the options of the group formation in the controller box. These modifications include gender and label. User also need to specify the number of groups or the maximum people per group. After the user verify both input box and controller box, user can click the start button at the controller box. The system itself will automatically distribute the names given by the user with a given preference options set by the user. Finally, the result box shows the team generated by the system. All of these steps illustrate in Figure 2-7.