

learning techniques and eventually, he just came across with it when doing some research about cooperative learning method.

For common question, he mentioned that it is effective when implementing jigsaw learning method in his classroom. He would usually prepare the materials in parts and tell his student to go over each of the materials and explain it to the other group members. For the grouping formation, he would group it manually since he knew which students have excellent academic performance and which students are not. He would prefer to put at least one clever student in the group. Finally, he mentioned that the most important element that needed to have when conducting jigsaw learning method is subjects, self-study, design problems, self-complete, preparing the materials, and grouping. He highlights that subjects needed to prepare in a sense of dividing material into equal parts, and every group needs a leader to make sure that their group is going well.

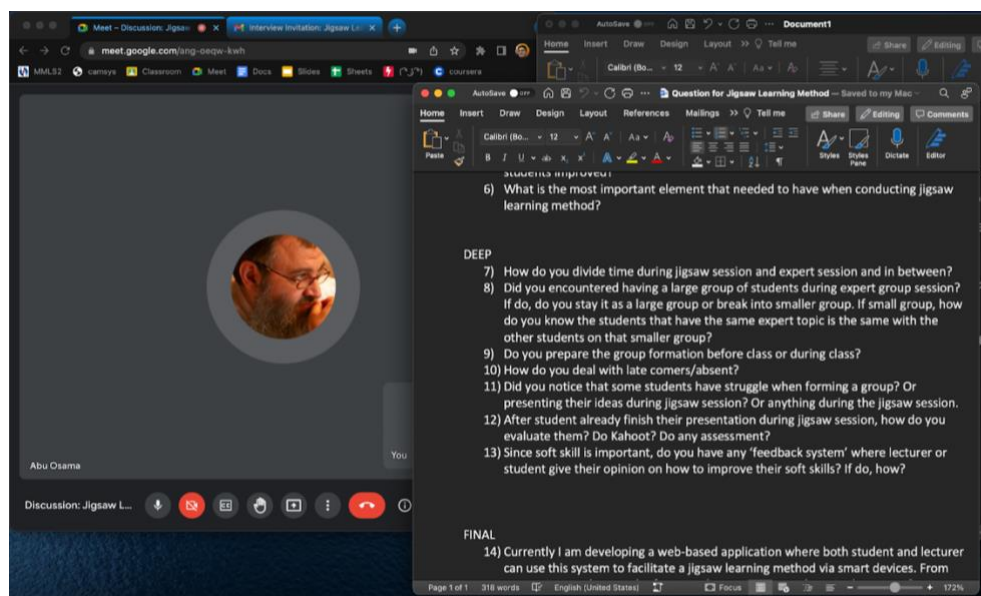


Figure 3-1: Interview session with Dr. Kousa

For in-depth questions, he prefers to call it two kinds of phases, learning phase and teaching phase rather than the original idea of jigsaw learning method terms which is expert session and jigsaw session. During expert session, he gives times for two parts which is student need to individually scan and understanding the materials, and the actual discussion with group members. During jigsaw session, he would make sure that every student will have their own time to explain their materials with other group members. He also advised that always prepare time for the jigsaw session first then expert session. He highlights that the reasonable number of students in each group during expert session would be four to six students because he finds that doing a large group in expert session is unnecessary and burden. He also mentioned that he prefers to prepare all these group formation and time management before the class starts rather than during class time.

When forming a group, there is a way that he deals with late comers or absent. According to him, the only modification that he made is during the jigsaw session. If there is two student that teach on the same module in the teaching phase, he will make sure that student will be explaining half of their module. If there is an absent of the student during the jigsaw session, he will merge two groups so that the student that absent will be cover by the other student. Other than that, he also mentioned that one way to make student to take it seriously is to do a quiz or do individual assessment during the jigsaw session. He would give students a very simple question on the assessment for the student to evaluate their presentation during a jigsaw session. This assessment will be part of their overall marks on the subject.

Last but not least, Kousa give advise that student's job is just teaching while lecturer will just share a material which is one of the main objectives of a jigsaw

learning method. He was being asked on what kind of features if one would like to make an application to facilitate jigsaw learning method. He gave a few of his ideas to include into this project such as making a grouping feature based on criteria, analysis of the assessment that will grade student, jigsaw session that goes well with student within the group, time management for both session, and students can upload their own notes to lecturer.

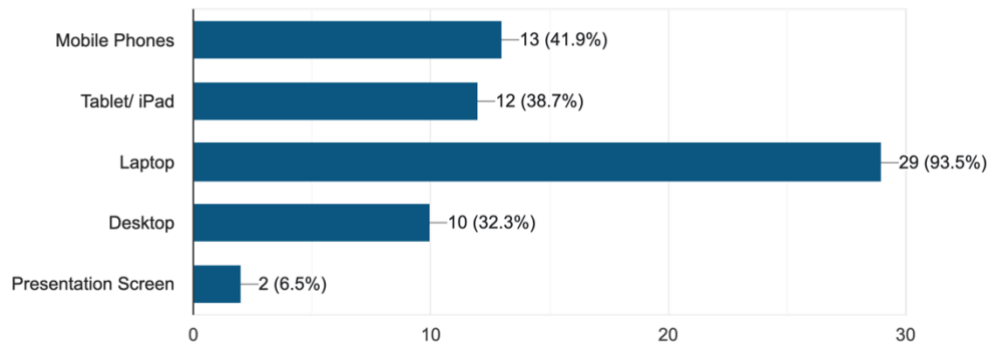
### ***3.1.2. Survey for the students***

For this project, it is important to gather feedback from students in order to improve the learning experience in the classroom. One way to do this is by administering a survey about jigsaw learning method in student's perspective. Unfortunately, this survey has too little response because of the limitation of available students who already experience jigsaw learning method. To encounter this, another survey about cooperative learning already being handed out. Since this survey can be done to anyone, this survey has 31 responses.

Majority of students picked laptop as their most comfortable devices when studying or learning a subject. It is clear in Figure 3-2 that majority of students would prefer more to use a laptop than any other gadget available.

What type of devices that you are most comfortable to use with when studying or learning a subject? If you prefer non-gadget, please choose other and state your preferences

31 responses



*Figure 3-2: Survey's question about types of devices that are most comfortable to use to study*

Other than that, it is safely assume that the grouping scenario that happen during cooperative learning could be the same scenario for jigsaw learning method since jigsaw learning method can be count as cooperative learning method. By using this survey, it can be used to validate a grouping scenario that will happen during jigsaw learning session. For example, students would choose their own group which proven in Figure 3-3. Another example would be about on how the student know their study group and it shows that majority of students get their own grouping during class which proven in Figure 3-4. After that, student would start from one person and pass it along with next person when presenting their ideas within the group as shown in Figure 3-5.