











that the students' absolute preference for the new class model in every evaluation item. As shown in Fig. 13, the student's course evaluation run by the "Ongoing class model" obtained a higher score in every evaluation item. The 2019's class was conducted by Blended learning with 32 students, and the 2020's class was taught by the "Ongoing class model" with 36 students because of the Covid-19 outbreak. It is encouraging that the evaluation score was raised in every item, despite the larger number of learners and purely online learning environment.

Interestingly, there was much confidence in the online exam grading system, which was also conducted online, referred to in evaluation item 4. The students' satisfaction for fairness was significantly higher than the previous year's class exam conducted offline. This was possible because of Moodle quiz's unique feature of randomizing formula equation mainly. Also, SEB(Safe Examination Browser) usage and Zoom camera's multiple students' profile video monitoring function devoted a lot to the score raising. These all numbers show the effectiveness and preference for the Ongoing class model is highly applicable.

#### IV. CONCLUSION

In this paper, a new class model named "Ongoing class model" is proposed. In Covid-19, all activities are conducted online, and these online environments need to be efficiently and effectively managed and controlled. The Ongoing class model does combine asynchronous modules and synchronous modules seamlessly. It is based on several strategies: immersive multiple character representation, supplementary SNS usage for emergent cases, real-time activity monitoring (including external tools), adaptive remediation of learning path including group activities, real-time video delivery with live commentaries, and usage of reuse of recorded synchronous session for other classes.

It consists of a pre-Zoom session, Zoom session, and post-Zoom session. In the pre-Zoom session, the instructor prepares the activities and resources. Zoom session consists of pre-class activity, lecture-delivery activity, activity & monitoring, and team activity. In the pre-class activity, the instructor uses various technical services or apps to fortify students' learning. The instructor delivers the lecture either by video, streaming, or mixed in the lecture delivery activity. In the activity & monitoring, the instructor monitors students learning accomplishment in real-time and react with it. Lots of collaboration tools are used to encourage the students in a team activity. In post-Zoom, peer-review assignments are used, and the recorded class video is reused for various purposes.

All of the tools used for the class model were either open-source software or free services except Zoom. Considering that most public institutions or organizations usually provide zoom, this model can be easily applied without any budget barrier. The new class model's effectiveness was validated by the students' course evaluation survey executed by the university. All of the students gave a higher score for each evaluation item.

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