

ABSTRACT

The COVID-19 outbreak that continues to develop has affected the world of education where the government requires all educational institutions to conduct Study from Home (SFH) or online learning. Online learning has shifted to using video conferencing as a face-to-face substitute. In this study, QoE and QoS analysis was carried out in online learning with Google Meet, Zoom, and Webex during lecture hours at the Telkom Institute of Technology. QoE analysis uses the parameters of audio quality, video quality, and delay with a questionnaire as a data retrieval medium. Meanwhile, QoS uses parameters, namely: packet loss, jitter, delay, and throughput. QoS data retrieval is done in real-time using the Wireshark application. The QoS results in the regular class have an average throughput value of 5740 Kbps and the employee class is 1861 Kbps, the delay in the regular class has a value of 1.44 ms and the employee class has a value of 10.44 ms, then the jitter value in the regular class and employees has the same value. the same is 0 ms, and the last is the packet loss parameter where for the regular class it has a value of 0.28% while for the employee class it has a value of 0.17%, from these results the regular class and the employee class is in a good category according to THIPON standards. The QoE results obtained have an average audio quality value of 4.33, video quality of 4.20, and delay of 3.87 from the lecturer's perspective, while the average value of audio quality is 3.89, video quality is 3.79, and a delay of 3.60 from the student's point of view, from these results the QoE obtained from the assessment of lecturers and students is in a good category according to the ITU-T P.800 standard.

Keywords: Mean Opinion Score (MOS), Quality of Experience (QoE), Quality of Service (QoS), video conference, Wireshark.