Program Development To Check Students' Concentration During Online Class

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1. Purpose There is the problem the learning gap reveals between students who concentrate on online classes and those who cannot. The purpose of program development is teacher can monitor students' learning concentration graph at the same time inducing student’s class participation by making an alarm sound when student is dozing off. Differences from similar studies is measuring student's distraction by the distance Between eyebrows and monitoring by the real-time graphs on web. 2. Program Design and Coding I modified and reused Open source library in Python like OpenCV, Dlib Face Landmark Detector, Gaze Tracking, Flask, SQLite, highchart, REST API. Student’s learning concentration calculates by distraction measurement and Drowsiness judgment. Distraction calculates by the distance between the coordinate reference point 27 on the image taken when staring at the screen and the coordinate point 27 (between Eyebrows) on the image taken with a cam. If the blinking state persists for more than 30 seconds, it judge drowsiness and the student’s learning concentration becomes zero. In this time, alarm sound is generated on the sleeper's laptop. If students' concentration value send to web server during online class, the web server deals with analysis, statistics and graph output on web as well as collects concentration values in real time. 3. Conclusion This SW program can improve efficiency of online learning by notifying to the teacher when a large number of students lose their concentration. Because alarm sound is generated on the sleeper's laptop, this program helps students participate in class.

Awards Won: