IV. CONCLUSION

We reported on new features added to smart device software (AES) as support for acceleration experiments in junior high and high school and discussed the results of evaluation experiments. The evaluation experiments targeted high school students at the national institute of technology, Ibaraki College, who used AES to perform acceleration experiments on slopes and horizontal rails. Also, to quantitatively investigate the degree to which learner comprehension of velocity and acceleration was attributable to AES experiments, we administered tests of comprehension of the relations between time, velocity, acceleration, changes in acceleration under differing experimental conditions, and related topics. The results indicated some learning promotion effect on velocity and acceleration. Results of questionnaires given after the experiments further showed that AES was easy to use as experimental equipment and that it aided the comprehension of study topics and the meaning of graphs. Some students did not have enough time to address all topics, so as a future task it is necessary to consider improvements to the experimental content. Also, some students provided incorrect answers for filter processing so that we will reconsider the methods for filter processing.

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