

Comparing Student's Understanding On Factual and Conceptual Knowledge in Biology Using Real Object, ICT, and Blended Learning

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ABSTRACT

The emerging online learning in schools in rural areas in Indonesia is forced likely because of the lockdown of the schools during the Covid-19 pandemic diseases. Some teachers and students have not ready yet to take online learning completely. There are some constrains of it such as internet access, tools, devices, and learning management system. Usually learning biology uses face-to-face modes, where teachers present objects of biology. Students learn from the objects by doing observation or experiment under teacher guidance. Students read students' books and use students' worksheet. However, during lockdown, they are forced to use online learning. This research was done just before the lockdown, comparing the learning achievement of senior high school students in biology by using real objects (RO), online learning (OL), and Blended Learning (BL). The research design was a quasi experiment with a pretest and posttest comparison group design. The research was done in two high schools, involved two high schools, two teachers, six classes, and 135 students. The sampling technique was cluster random sampling. The instrument was mainly tests validated by expert judgment and empirical test. The results indicated that (1) RO gave more on factual knowledge, (2) OL increased more on conceptual knowledge, and (3) Blended Learning increased both on factual and conceptual knowledge. Therefore, it is recommended that learning biology in rural areas should use both RO and OL through BL.

Kata Kunci: Keyword: learning biology, real object, ICT, Blended Learning, factual knowledge, conceptual knowledge