

# Effectiveness of Integrated Learning using Virtual Microscopes in Histology Courses of Sports Science Students

by RL Ambardini, Wara Kushartanti, Eka Novita Indra

## ABSTRACT

This study was aimed at determining the effectiveness of integrated learning with virtual microscope in Histology course on students of Sport Science. This research used experimental design with two group post test design design with 68 students who took the subject of Histology. Learning method used is integrated learning that is by integrating between theory and practice, by providing guidance to students to verify the theory by practicum and vice versa practicing simultaneously using the knowledge of the theory. The instrument used were test and a questionnaire about students's perceptions of integrated learning methods with virtual microscopes. It covers some aspects namely methods, materials, and virtual microscopy. The data were analyzed descriptively. While the data of learning achievement was analyzed by t test with significance level  $p < 0,05$ . The results showed that the integrated learning method with virtual microscope gave better learning achievement result than traditional method with light microscope ( $p < 0,05$ ). In general, the perception of students of Sport Science on the learning method applied very well (85%), about 15% have good perception, and no students have poor perception. When viewed from integrated learning method aspect, 3% of students have poor perception, 12% have good perception, and 85% have very good perception. While from the aspect of using virtual microscope 9.1% have poor perception, 42.4% have good perception, and 48,5% have very good perception. Perceptions of material aspects Histology, 72.7% have very good perception and 27.3% have good perception. In terms of the level of understanding of the material, as many as 57.6% of students stated that histology material is easy to understand and 42.4% have difficulty in understanding Histology material. Student perception towards integrated learning method using virtual microscope in histology course is very good. In Conclusion, the method of integrated learning is considered effective in studying histology and the use of simple virtual slides is very helpful understanding of histology tissue structure.

Kata Kunci: *Histology, integrated learning, virtual microscope*