Analysis of Undergraduates Biology Education Students' Pedagogical and Biological Academic Competence

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ABSTRACT

This research on the analysis of the undergraduate biology education students' pedagogical and biological academic ability is intended to analyse the biological content knowledge mastery (CK), ICT skill ability (as technological knowledge: TK), and pedagogical knowledge (PK) towards the 6th grade of the National Qualification Frameworks (NQF). Moreover, it is also intended to determine the contibution of the student input quality as well as the maturity level on the pedagogical and biological academic achievement.

This is a survey research with a research population of all undergraduate biology education students of FMIPA UNY who have completed theoretical courses, or at least seventh semester students (7) at the time of data collection, both regular and international class students. The sample of this study was 100 Biology Education Study Program students who represented the year and class types. Samples were taken from the population through proportional-random sampling. To measure the achievement of mastery of biological material (content knowledge = CK) and educational material (pedagogical knowledge = PK), test instruments were used. To find out the educational background before becoming a PSP student, questionnaires were used. To find out the mastery achievement of students regarding biological ability (CK) and education (PK), the data were analyzed descriptively. To find out the differences in student mastery regarding biological ability (CK) and education (PK) between classes and between classes.

The results showed that the ability of the TPACK of PSP Biology students was sufficient, with the weakest educational aspects being mastered. International class programs contribute positively to students in mastering the ability of TPACK. The educational background of Biology Education study program students, before attending education at PSP Biology tends to influence the mastery of the ability of TPACK. Need further study to find out the contribution of educational background to mastery of TPACK along with its causes. It is necessary to intensify the program of activities as it has been designed for international class students, because it is known to have a positive impact on the ability of TPACK.

Kata Kunci: *content knowledge, pedagogical knowledge, Technological Knowledge, PSP Biologi*