

The Analysis of Students' Mathematical Communication and Connections Skills in Statistics

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ABSTRACT

This study aims to describe mathematical communication and connection skills in Statistics. The mathematical communication skills in this study refer to the students' skills to: (1) present the data or information into table or diagram correctly; (2) use mathematical terms, symbols/notations charts, diagram, illustrations or formulas correctly; (3) solve the problems correctly and systematically; and (4) provide the correct reasons or explanations on the solution they got. Meanwhile, the connection skills include students' ability to: (1) connecting the concepts of Geometry, Sets, and daily problems using Combinatoric principle correctly; (2) transform the statistical problems in daily life into mathematical models; (3) use formulas/principle to solve daily life problems that related to statistics.

The participants of this study are 35 students of mathematics education department, Yogyakarta State University who enroll in Statistics course during September – December 2016 semester. The course material includes: basic data description, probability, parameter estimation, and hypothesis testing. The data of this study are collected from midterm exam which contains five statistical problems in essay test.

The data show that: (1) the students' mathematical communication and connection skills in Statistics are in the medium level; (2) the ability to use correct mathematical terms, symbols/notations charts, diagram, illustrations or formulas seems to be the lowest one among the four communication skills measured in this study; and (3) in relation to connection skills, most students have difficulties in connecting the concepts of Geometry, Sets, and daily problems using Combinatoric principle. The results indicate that the students' mathematical communication and connection skills are serious issues that need to be addressed because they are prospective mathematics teachers who should deliver the mathematical concepts/principles to students clearly and correctly. This role requires good communication and connection skills. Therefore, it is obligatory to equip the students with adequate mathematical communication skills.

Kata Kunci: *mathematical communication skill, connection skills, statistics*