

ABSTRACT

The main foci of the study are to understand how grade seven students solve the word problems of linear equations of one variable, and the respective errors and misconception. Also, the study investigated the possible causes of the errors and misconception. Qualitative and quantitative methods were used in the study. Researcher collected and categorized different types of errors and misconception, and outlined the distribution through descriptive statistics. Worksheet and quiz used in the study were constructed by several secondary school mathematics teachers. Based on these assessing tools, a screening test was designed. 75 students participated in this part of the study, their responses were analyzed. An interview test paper of several word problems were then constructed with items based on the errors and misconception, from problems with highest error rate and problems with most number of different errors, given by the students in the screening test. Nine students were selected to participate in this second part of the study. All of them were asked to report their verbal protocols when they worked on the test paper. Case study was done in this part.

The study found that 47% of students committed several kinds of errors and misconception, mainly on three types of word problems: (1) distribution problems,

(2) ratio problems, and (3) speed problems. In the screening test, there were seven types of errors and misconception found: (1) confusion on inverse relationship, (2) misinterpretation on the words, (3) miscomprehension on the problems, (4) unable to keep the “equal” relationship between the two sides of the equation, (5) confusion among similar concepts, (6) misuses of concepts, and (7) errors in formula application. In the interview test, there were four types of errors and misconception found: (1) unable to keep the “equal” relationship between the two sides of the equation, (2) unit confusion, (3) applying addition and subtraction for ratio calculation, and (4) measurement unit confusion. In general, word problems are quite difficult for students. To conclude from error rate, errors or misconception, the difficulties may be attributed to (1) students’ prior knowledge, (2) students’ problem schemes, and (3) students’ ability to comprehend the problems. Finally, researcher suggests that teachers could consider (1) students’ organization of prior knowledge, (2) students’ problem scheme establishment and problem category recognition, and (3) how to apply situation models for assistance when they teach word problems of linear equations of one variable.