

LEVELING STUDENTS' CREATIVE THINKING IN SOLVING AND POSING MATHEMATICAL PROBLEM

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Abstract

Many researchers assume that people are creative, but their degree of creativity is different. The notion of creative thinking level has been discussed by experts. The perspective of mathematics creative thinking refers to a combination of logical and divergent thinking which is based on intuition but has a conscious aim. The divergent thinking is focused on flexibility, fluency, and novelty in mathematical problem solving and problem posing. As students have various backgrounds and different abilities, they possess different potential in thinking patterns, imagination, fantasy and performance; therefore, students have different levels of creative thinking. A research study was conducted in order to develop a framework for students' levels of creative thinking in mathematics. This research used a qualitative approach to describe the characteristics of the levels of creative thinking. Task-based interviews were conducted to collect data with ten 8th grade junior secondary school students. The results distinguished five levels of creative thinking, namely level 0 to level 4 with different characteristics in each level. These differences are based on fluency, flexibility, and novelty in mathematical problem solving and problem posing.

Keywords: student's creative thinking, problem posing, flexibility, fluency, novelty

INTRODUCTION

Many researchers assume that people are creative, but their degree of creativity is different (Beghetto & Kauffman, 2009; Craft, 2003; Isaksen, 1987; Lumdaine & Lumsdaine, 1995; Pehkonen, 1997; Solso, 1995). That is shown by someone being able to create ideas, technology or knowledge whilst others merely use these or just accepted. Mathematics creative thinking is a combination of logical and divergent thinking which is based on intuition but has a conscious aim (Pehkonen, 1997). When one is applying creative thinking in a practical problem

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