

An examination of Libyan and Turkish Students' Thinking Levels Through Their Quadratic Patterns Generalization According to SOLO Taxonomy*

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Abstract

This study aimed to an examination of Libyan and Turkish students' thinking levels of quadratic patterns generalization according to SOLO taxonomy. The study model was a hybrid design with predominantly qualitative design. In this study, the working group was consisted of 112 from Libyan students at three high school in the city of Tripoli in Libya and 129 Turkish students at three high school in the city of Kastamonu in Turkey. The study was undertaken in the 2018-2019 academic year. Overall, the results showed that most Turkish and Libyan students who participated in the study mostly their level on the Uni-structural level, the Multi structural level and the Relational structure level in quadratic patterns generalization, However, some of them were able to reach successful in moving Advanced thinking levels in this area. Despite of these, there Libyan and Turkish students left the problems blank and there were students at the pre-structural level. In order for students to achieve a higher level of thinking in understanding and quadratic patterns generalization. Supporting students to develop their thinking level by solving problems and getting them involved in different activities that are aimed at promoting their skills and improving their level thinking in quadratic patterns generalization. In addition, mathematics teachers should create opportunities for students to relate their mathematical ideas and concepts to enable the students to promote their ability in thinking, as well support students' thinking levels in moving from a design-based learning environment that encourages "recalling facts" to one that encourages "analysis and synthesis".

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