COMPUTATIONAL THINKING INSTRUCTIONAL DESIGN IN REALISTIC MATHEMATICS

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ABSTRACT

The purpose of this research is to produce a trajectory design for learning to think computationally in a realistic mathematical approach. The background of this research is the importance of the role of computational thinking in facing global competition in the 21st century so that every individual should able to become a problem solver. This causes the need for innovation in the development of learning trajectory designs in mathematics learning, especially in integrating computational thinking in some mathematics subject matter through a realistic mathematical approach that can train students' computational thinking skills.

This research is development research which is specifically in the form of developing a learning trajectory design on computational thinking competence by using a design research development model. The stages carried out consisted of three stages, namely research preparation, implementation of research design, and retrospective analysis. Mathematical content that is taken to be integrated with computational thinking is a number pattern by starting in the context of the *blankon* arrangement (traditional Javanese headgear). The programming language used is Scratch.

The result of this research is a learning trajectory in developing computational thinking through the Scratch Program. The paths are (1) to create a simple dialogue program, (2) to use Scratch as a calculator in solving mathematical problems, (3) to create a calculator program that can be used by others, (4) to use Scratch as a tool to solve mathematical problems that contain iterations, (5) to create iteration programs that can be used by others in solving problems, and (6) to create math projects with Scratch programming.

Kata Kunci: *Computational Thinking, Scratch, Pattern of number*