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# Designing Worksheets to Improve Reflective Thinking for Elementary School Students on the Solid Figure Subject

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## Abstract

The aim of this study was to determine the level of validity, practicality and effectiveness of student worksheets on reflective thinking for fifth-grade elementary school students on the Solid Figure subject. This research is development research by applying a 4-D development model with 4 stages, namely define, design, develop and dissemination. The design stage of this student worksheet consists of three parts, namely (1) the introduction consists of a list of competency objectives which contains core competencies, basic competencies, indicators and learning objectives, (2) the core part consists of a description of the material which contains introductory material for studying geometric concepts in each learning activity with a problem solving approach based on reflective thinking, (3) the closing section which contains a collection of practice questions that train students' reflective thinking skills. The instruments were used to collect data with validation sheets, questionnaires and tests of reflective thinking skills in solving mathematics problems involving 105 students of fifth grade, 3 teachers and 3 experts in learning mathematics for elementary students. The data were then analyzed using a quantitative descriptive approach. The results of expert validation of both material aspects, constructs and language aspects fulfill the valid aspects. While data related to responses from students and teachers describe student worksheets fulfilling practical aspects. The results of observations regarding the activities of students and teachers in the learning process using student worksheet of reflective thinking describe a very active learning process. The results of data analysis related

to students' reflective thinking skills showed that there was an increase in students' reflective thinking skills with an n-gain index of 0.62 which was in the medium category. This indicates that the student worksheet on reflective thinking (SWRT) is effective in improving students' reflective thinking skills.