

Contextual Learning Styles-Based Approach to Improve Mathematics Learning Outcomes In Primary School

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Abstract—The Student Worksheet (LKS) is a part of the learning tool that functions to support the implementation of the lesson plan. The LKS that designed and used in learning aims to help the students to develop concepts, train the students to discover and develop process skills, guide the teachers and the students in carrying out the learning process, and help the students to obtain information about concepts learned through a systematic learning process. The purpose of this research is to produce a mathematics learning tool using contextual approach based on learning style that is valid, practical and effective.

This research is a developmental research that uses Ploomp model consisting of 3 stages; preliminary, prototyping, and assessment. The developed LKS is validated by an expert in content, language, and media construction. Then, the LKS is tested to see its practicality and effectiveness. The LKS practicality is seen from the observation of learning implementation, questionnaire of the student and teacher response, while the effectiveness is seen from observation of the student activities and the students' learning outcome. The collected data were analyzed descriptively.

The results showed that learning tools using contextual approaches based on learning styles developed have met the valid criteria of content and constructs with characteristics close to the student's daily life, in accordance with standard punctuation, and attractive colors. The learning tools are practical with good characteristics in terms of implementation, ease and time required. They have also been effective in improving student activity and learning outcomes. The use of this device makes the students learn actively, this is seen from the student activities. The students' passing grade reaches 80,24% which means the tools are effective in improving the student learning outcomes. Based on the result of the research, it is concluded that the contextual learning tool using learning style based approach have been valid, practical and effective.

Keywords—Mathematical learning tool, contextual based learning style, circumference and square and rectangular areas

I. INTRODUCTION

Learning in the classroom will be more meaningful if students get experience what they are learning, not only knowing it. The statement is in accordance with the opinion of Aqib (2014: 1) that material-oriented learning proved to be successful in short-term recall competition but it is failed to equip the students to solve the problem in long-term life. Kasmiati (Lestari, 2014) states that learning using a contextual approach fosters pleasure, increases activity, and improves learning achievement. So contextual

learning will be meaningful for the students as it relates the material to the daily life of the students.

Teachers in teaching should pay attention to the learning style of the students like knowing how to react using the stimuli received in the learning process. This is in line with the opinion of Candra (2015) who states that a teacher must make preparations by assuming what strategies and methods will be used to deliver the material. Thus, the material can be well delivered to the students who have different learning styles. Keefe (Erhardt:2016) describes learning styles as the method that people use to process, internalize, and remember new academic information. Her first model included environmental, emotional, sociological, and physical (later converting to physiological and psychological) variables. One of the physiological variables, the perceptual element, included hearing (auditory), seeing (visual), manipulating (tactual), and moving (kinesthetic).

The conformity of the teachers' teaching style and the students' learning style is an important aspect in creating and implementing the learning process in the classroom. This is in line with Prashing's opinion (Pertiwi, 2015: 4) states that matching the students' learning styles with proper teaching styles will result a successful interaction between the teachers and students as well as the learning outcomes will improve. Moreover, contextual learning based on learning styles will encourage the students to make connections between their knowledge and application in daily life in solving multiplication problems in various ways in accordance with the learning styles that the students have to improve learning outcomes.

II. METHOD

The data obtained from this research and development in the form of data collected through the implementation of formative evaluations are grouped into two parts, namely qualitative and quantitative data. Qualitative data was obtained through trials of individuals and small groups, while quantitative data was obtained from the language expert validation data, media experts and expert learning assessments. The instrument that will be used in this study is RPP validation instruments and LKS to assess effectiveness.

The process of developing contextual learning tools based on learning styles for grade 3 in elementary school including perimeter material, square area is done using the

Ploomp development model. The validation process in the development of contextual learning devices based on style learning styles is divided into 2 (two) validation categories, namely the validation of the Learning Plan and validation of the Student Worksheet. Learning Plan Validation consists of identifying lesson plans. In the validation of Student Worksheets there are three experts namely linguists, content, and media design experts. Products that have been categorized as valid by the validator, then continued to be tested to three students who have high, medium and low grade students. After testing three students, it was followed by a small group of 6 people with different abilities. It aims to test the practicality and effectiveness of the product. Subsequently a field test was conducted at SDN 22 Ulak Karang Utara during six meetings with an observer to see the effectiveness of the device. After students work on LKS, students immediately work on the final test of learning to see student learning outcomes.

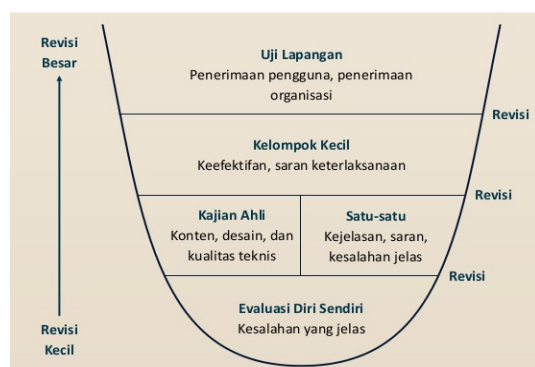


FIG 1. FORMATIVE EVALUATION LAYERS
SOURCE: TESSMER IN PLOMP (2013: 36)

III. RESULTS AND DISCUSSION

The result of the research showed that learning-based contextual learning tools based on learning styles developed in categories were very valid both in content and construct with characteristics: (1) learning tools fulfill all aspects of contextual characteristics i.e. constructivism, find, ask, study society, modeling, reflection and assessment, (2) learning tools were in accordance with competency standard, basic competence, and indicators, (3) learning tools were consistent and supportive of each other; (4) presentation of learning tools was correct in terms of format, content, presentation, language, and alphabet. It also showed that learning tools based on learning styles have been fulfill the practical criteria with the characteristics: (1) learning tools were clear in terms of usage guidance, language, and contextual component, (2) learning tools were easy to use in learning activities, (3) the time provided for performing tasks in the learning device was adequate. This can be seen from the questionnaires data of the teacher responses and the responses of the students' questionnaires, and interviews of the teachers and the students.

It was also showed that learning tools based on mathematics contextual learning style developed had been effective in improving student activity and learning outcomes. It can be seen from the data of observation result of student activity that showed the activity of learning mathematics by using module, and completeness of student

learning result which more than 82,35% reach minimum passing grade.

This development had resulted a learning tools with contextual approaches based on learning styles for elementary school grade 3rd. Basically, this development can also provide a picture of math learning becomes easier, and effective and can be used as an indicator to improve student learning outcomes. Learning tools with contextual approach based on learning styles can be used as learning resources for students in learning mathematics, especially on the perimeter material and the area of square and rectangle. By using learning tools using a style-based contextual approach, the learning process becomes effective, the students can learn independently and find their own concepts with different learning styles.

IV. CONCLUSIONS AND SUGGESTIONS

This LKS development can be done by other class teachers. On the other hand, the validity, practicality and effectiveness of these devices should not be ignored because it will determine the level of quality of learning devices developed. The teachers can develop learning tools with contextual approach so that students are motivated in learning. Further, learning tools with contextual approach based on learning style can be developed together with the teachers' colleagues.

This development is done in line with the implementation of learning in the classroom in accordance with the goals set. The development of this LKS refers to the principle of learning that emphasizes the principle of giving students the freedom to learn with their own abilities and speed. In learning using this LKS, the students are required independence and must conduct a series of learning activities.

Learning by using LKS on the use of the time required, depending on the ability of students and how the teacher set the conditions. The high-ability students who are time constraints get no problem on managing their learning, yet the students who have low ability, certainly the use of these devices is slightly less effective

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