LEARNING DEVICE PROBLEM SOLVING SEARCH, SOLVE, CREATE, AND SHARE (SSCS) ON SOCIAL ARITHMETIC MATERIAL

Yusrawati Syahkubat[1], Siti M. Amin[1], Raden Sulaiman[1]

[1]Universitas Negeri Surabaya

yusrawatisyahkubat@mhs.unesa.ac.id

Key Words:	ABSTRACT
The device development, Problem Solving Search, Solve, Create, and Share.	The research aimed to describe the development process and the result of developing learning device on arithmetic social material in eighth grade and determine the effectiveness of learning *Problem Solving Search, Solve,Create, and Share* on arithmetic social material in eighth grade. The development process refers to the 4-D model. Learning tools developed are Learning Implementation Plan (RPP), Student Worksheet (LKS), and Test Results Learning (THB). This development produces valid learning tools based on expert validation. At the trial stage data obtained from the activity; (1) the ability of teachers to manage positive learning, (2) student activity during active learning, (3) student's response to instructional device and positive learning activity, (4) mastery learning classically achieved that is ≥ 80% student get value ≥ 70. Based on the analysis of the data, it can be concluded that: Using Four-D model to develop learning device of learning *Problem Solving Search, Solve,Create, and Share* material meet the criteria of a good quality.

INTRODUCTION

Eduacation is a process to help human in developingit's potency so can be able to anticipate every changing that was used to happen. Developing self potency that it has can improve education quality and inderectly impact to human resource that is qualitative (Mulyasa, 2007:11). One of the efforts to develop education is with development in education field. In case of developing whole Indonesian, development in education field is a mean andvihecle of education that are good for developing qualitative human resource. Therefore, education needs special attention of government, society and education organiser. Thus, the aim and dream can be achieved.

Education success can not be separated from teacher's rule as an educator. A teacher takes an important rule in learning process. The teacher takes a responsibility to solve problems in education field. The way teacher solves problem in education field is to implementated suitable learning strategy. Implementation learning model is hoped to be able to improve learning quality and to give chance for students actively determine and make sience concept and to develope students'skill of thinking. Therefore, the teacher must be creative to determine and to use learning model so that basic competency in n curriculum can be described and translated through out learning process.

Rusman (2012:245) states approach solving problem is an activity of learning approach that is hoped to empower studentto be an independent individual and able to face every problem in its life in the future. Learning model in solving problem is a learning model that is focused on students' activity in gaining knowledge and skill, students do not wait information only from teacher, but based

on self efforts to find a new knowledge and skill and integrate with knowledge and skill before. It means that learning by solving problem not only orientated on the being knowledge but also focus on how to get knowledge, by solving problem and creativity thinking of student more developed. One of the effective leaning model to be applied in mathematic learning and can improve higher order thinking in situation that orientated on solving problem is a learning model *Problem Solving Search, Solve, Create, and Share* (SSCS).

According to Pizzini (1988: 2) this model has four steps learning that is sequence start from problem *search, solve,create and share.*

Learning device is made for all things that have been planned can be achieved well. Majid (2005: 94) states thatto make a good plan and can execute ideal learning process, teacher should know good planning such as: identify student need, goal of learning that is achieved, any relevant strategies and scenarios can be used to reach the goal and evaluation that criterion. But infact in the field showed different indication, learning implementation plan that that teacher arranged did not use learning model in accordance with material was taught.

Relating to case above, teacher is needed to develope good learning device. Because the learning successis influenced by teacher ability in making good learning implementation plan so that can execute ideal leraning process. It means, preparing learning by lesson plan is important because can give effect to teacher in applying learning. It is appropriate with statement of Syaodih (1989: 35) that learning design is whole form of written planor preparation needed for learning implementation. It is in form learning implemention plan, student worksheet, and test results learning.

Learning device, that developed, is device based on learning models *problem solving*search *, solve , create, and*share

(SSCS) thatwill be implementedin teaching social arithmetic material. SSCS model is a model of learning that present problems in real world as a context for students to learn about skill of solving.Arithmetic social material is a suitable material to be taught by using learning problem solving SSCS. For this material is closest with relation with selling, buying, advantage and disadvantage in finishing questions of solving problem.

Based on self experience of writer as a teacher in Public Junior High School 4 of Sabang many students still experienced difficulty in finishing questions of solving problem.

Social arithmetic is not only used in mathematic. But it is also material has important rule daily life and give benefit for students, since majority of residence in city of Sabang have livelihood in trading. Society can implementate concept of social arithmetic in trading. However social arithmetic material has been known in daily life of students, but in reality many students do not determine price ofbuyinga thing yet, if price of selling and presentation ability and disability known. Disability caused by students did not understand concept of buying and selling price, advantage and disadvantage. To solve the condition such needs creativity of teacher in creating qualitative learning device with basic of *problem solving* SSCS to teach social arithmetic material.

Base on consideration above, writer isinteresting to conduct research with title "learning device *Problem SolvingSearch, Solve, Create, and Share (SSCS)* on social arithmetic material". There is aim of research that : to describe development process and result qualitative device learning by using learning model *Problem Solving Search, Solve,Create, and Share (SSCS)* social arithmetic material.

Method

This research used development method. Device development refers to development model 4-D (*Four D-Model*

)that consist of step *define, design, develop, and disseminate, but on this study* only conducted on *develop* step *disseminate* not conducted because of step *develop has produced good device.* Choose subject is students class VII, and teacher who teaches class VII Junior High School period learning 2016/2017.

Research Procedure

Prosedure that willbe conducted in this research consists of four steps: preparation , action, data analysis and report writing.

1. Stage of preparation
   a. Develop and develop learning tools and research instruments.
   b. Analyze the validation of learning device and research instrument with the aim to revise all learning tools, namely Learning Plan, Student Activity Sheet, Study Result Test (THB), and research instrument before being used in the implementation class.
2. Implementation Phase
   The activities under taken at this stage are:
   a. Provide a pretest to know students' early mastery of social arithmetic material before implementing SSCS problem solving learning
   b. Provide treatment using SSCS problem solving learning tools in the learning process.
   c. Provide posttes to know students' mastery of social arithmetic materials after learning SSCS problem solving.
   d. Compare the results of pretest (T1) and posttest (T2) to find out the sensitivity of test result learning items. T1 and T2 are made equal
   e. During the learning process, observer I will act to observe the student's activity during the learning, while observer II observes the ability of the teacher in managing the learning. Observer I and observer II are 2 different people.
3. Stage of data analysis
   After the development data collected, the next activity is analyze the data obtained from the implementation stage.
4. Stage of report Wwriting
   Activity on this step is to describe research process and result and start from step preparation until result analysis that is gained of data analysis.

Data Collection instrument

Instrument isused to collect data this research such as:

1. Validation Worksheet of learning device.
   Validation Worksheet of learning device used to get data about that consists of : validation worksheet of learning implementation plan, validation worksheet of student worksheet, and validation worksheet of student learning result. Validation worksheet is given to validator with device that is validated to get input or suggestion of validator on devicebe fore tryout is conducted.
2. Observation worksheet
   Observation worksheet in this research consists of :
   a. Worksheet of teacher ability observation in organizing learning of obtaining data.
      Wether model learning device *problem solving Search, Solve, Create, and Share* that is device developed to be used by teteacher to organize learning on social arithmetic material.
   b. Worksheet of student activity during learning.
      Worksheet of student activity on this research is worksheet of student activity observation in doing learning activity in accordance with activity of model learning *problem solving SSCS on* social arithmetic material.

3. Worksheet of student response questionnaire.
Worksheet of student response questionnaire used to collect information about responseor sstudent opinion deal with learning device and activity in model learning in learning model *problem solving Search,Solve, Create, and Share* (SSCS).

4. Test Data
Test Results Learning (TRL) used to obtain information about validity, reablity, and sesensibility question point. TRL also used to know student learning ending clasicaly. instrument of TRL that used by writer such as explanation test.

Technical Data collection

Technical Data collection used in this research is as follows :

1. Device validation
To collect device validation data learning is conducted by being validated by expert that, to give draf I with device validation data learning, then validator writes mark one ach device with best category (mark 4), good (mark 3), good enough (mark 2), worse (mark 1) on validation worksheet applied with all criteria with assessment scalet hat has been formed for every assessment criteri on that good enough observation.

2. Teacher ability data inorganizing learning.
   a. Data taken by observing that is done by an observer who follows learning process . Observation assessment is done by giving sign (√) on every aspect of assessment in aassessment collome applied. Assessment consists of four categories that, best (mark 4), good (mark 3), worse (mark 2), and worsest (mark 1)
   b. Student Activity Data

Observation carried out on a learning group toward student activity during activity of learning *problem solving* SSCS is taking place. Observation Assessment conducted by giving sign (√) on every aspect of assessment incollom of assessment applied. Assessment consists of 4 categories that , best (mark 4), good (mark 3), worse (mark 2), and worsest (mark 1).

3. Student response questionnaire
Data deal with student responseis ccollected with questionnaire that given to student on ending activity in second meeting after post-test. Student gives sign (√) in collom which shows sense or student opinion about device and implementation learning, then its result is analyzed.

4. Learning Result Test
Data of result test collected by using instrument learning result test that implementated before and after learning *problem solving* SSCS for social arithmetic material.

Analyzing Learning Device Development Data

1. Analyzing Expert Validation Data
For every worksheet that has been validated, analysis result usedas foundation to review learning device that is developed (Draf I).Validator gives mark minimal 3 fore verya spect that stated in validation worksheet. Learning deviced stated inthis research, if validator gives mark onevery aspectof good minimum category assessment.

2. Analyzing observation data
   a. Analyzing observation data about teacher ability
   Analyzing observation data about teacher ability in organizing learning is analyzed by writer by using descriptive statistic. Teacher ability in organizing stated good if assesment that is given by writer minimal good in category good is minimal mark 3.

b. Data obtained from result of sstudent activity observation.

Data obtained from result of sstudent activity observation during learning activityes analyzed descriptively. Student activity stated effectiveif analysis shows student activity during learning activity *problem solving* SSC that locate on good minimal category that observer gives mark to every assessment aspect minimal 3.

3. Data analysis of student response

Response data is analyzed by counting presentation many student who give positive responsein every category which is questioned on quistionaire worksheet to ward whole student who fill in quistionaire worksheet. In this research stated students response positive if many students that respond positive or give answer agree" that written on questionaire in presentation minimal 70% for every aspect thatquestioned.

4. Analyzing Test Data

Data obtained from pretest and posttest arranged to find out validation, reliability, and sensitivity of question point. Students stated completed in learning if 80% students obtain mark ≥ KKM that school determined by school. Data obtained LRT arranged to find test validity, reliability , and sensitivity.

a. Point question validation

Point Question validation found by recommending every obtained in every point with total score. LRTstated valid if validity coefficientto allitems question minimal at category enough namely (≥0,400)

b. Reliability

A question is called to have a high reliability if instrument give consistent result measurment. Test Reliability predicted by using formula Alpha. Single point called reliable if it has coefisien reliable minimal enough namely (≥0,400)

c). Question Point Sensitivity

To determine sensitivity, point question that used in *pretest* and *posttest is* the same. In this research point question stated sensitive if point question sensitive toward learning namely S ≥0,30)

RESULT AND DISCUSSION
Description Learning Device Development Result

Based on aim of this research, there are 3 steps to be carried out : step *to define,to design and to develop* .

In this step to *define* writer takes 5 steps activity namely : pre-post analysis, students analyze material , analyze duty, and formulate aim of learning.

In this step to *design* conducted learning device planning. The step consists of 4 activities: design benchmark reference tests, media selection, format selection, and initial design.

In this step *desain* writer design learning device such learning implementation plan, student work sheet and learning result test. In this step also designed observation work sheet to observe student activity and teacher ability work sheet organize learning by using approach problem solving SSCS, and student response question naire toward device and learning problem solving SSCS.

In this step to *develop* activity carried out is learning device validation, reading try out, and device development try out. Learning device that developed such as prototyping then validated by expert. Validation carried out by experts o see validation content, construct and language. Commment and input given by expert made as a reference to revise learning device so that can be gotten prototyping that has good category and can be used.

Learning devicep in second prototype tested to student class VII Junior High School located in Sabang city, sub-regency Suka Jaya. Learning activity carried out twice times meeting by using

learning device problem solving SSCS. From tryout result founded comment and input that made as a reference to reviseso that can be founded earning device proprototype as last prototipe (product)

description Data Analysis Result
1. Expert Validation
    Result of learning device validation is gotten from 3 validators shows that assessment of every validator in every aspect locate on category minimal good. While learning result test developed qualify category validity, reability, and sensitivity. Based on data analysis can be concluded that learning implementation plan (LIP), RPP, Student Worksheet (SW) and Learning Result Test (LRT) developed and statedvalid.
2. Observation Result
    a. Ability teacher to organize learning.
        Result of teacher ability analysis to organize learning in every meeting shows in category minimal good, namely mark given by observer to every learning aspect is 3 and 4, so that can be concluded that teacher ability in organizing learning problem solving SSCS is good.
    b. Student Activity During Learning
        Result of analyzing student activity during 2 meetingin category minimal good, namely observer gives mark to every aspect of student learning activity is 3 and 4, so can be concluded that student activity during learning active.
3. Student Response Result
    Student Response Result toward device and learning *problem solving* SSCS in category positive, namely presentation statement agree given by student to device and learning is minimal 70% students stated agree.
4. Test
    Result of test analysis finishing student learning classically achieved namely more than 80% students got mark minimal KKM.

Based on validation analysis to device learning developed, analysis result of teacher ability in organizing learning, result of analyzing students activity during learning. Analyzing students esponse to device and learning, finishing students learning classically achieved. So that can be concluded device learning *problem solving SSCS* is category good that qualifies criteria valid, practical, and effective.

CONCLUSIONANDSUGGESTION
CONCLUSION
a. Development process of learning device problem solving SSCS to social arithmetic material using model development 4-D.
b. Device resulted such as learning implementation plan (LIP), RPP, Student Worksheet (SW) and Learning Result Test (LRT) that is good quality namely : valid, practical , and effective.

Suggestions
a. Learning device can be made as an alternative mathematic learning device .
b. Because learning device resulted effective to teach social arithmetic material, so that will be good if it is tried out to other material.

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