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DEVELOPING TEACHING MATERIALS IN SOCIAL SCIENCE FOR GRADE V OF PRIMARY SCHOOL ON THE SUBJECT OF ECONOMIC ROLE

Rokmanah Siti*, Solihatin Etin, Winarsih Murni

Primary Education Program, State University of Jakarta, Indonesia

*E-mail: annah.sitirokmanah@gmail.com

ORCID: 0000-0001-7662-5080

ABSTRACT

This research aimed to develop a product in the form of teaching materials of social science on the subject of economic role. This research was conducted on grade 5 of primary school with the number of respondent of 52 students. This research applied Research and Development (R&D) model by Dick, Carey and Carey. Prior to the development of the product, needs analysis and literature review were conducted. The findings of preliminary study suggested that teaching materials were highly indispensable for social science instruction which could be learned independently with complete material, colored illustrations, and supplemented with learning activities and questions for practice. The process of product development was conducted in a hierarchical order. The evaluation process was performed in three stages. The first stage was the expert judgment conducted by linguists, material experts and media experts. The second stage was one-to-one evaluation conducted with three students having high, medium and low abilities. The third stage was small group evaluation conducted with sixteen students. The test results mentioned that the teaching materials of social science were feasible for use. To see the effectiveness of the product, it was followed by conducting field group test with 33 students. The results of t-test analysis showed the difference of learning result between pre-test and post-test. Based on the average score, it indicated that the teaching materials were effective for use in social science instruction. The findings from the questionnaire indicated that the students liked the teaching materials of social science.

KEY WORDS

Research, development, teaching materials, social science, primary school.

Education implemented in every educational unit starting from primary to higher education even conducted in formal and informal institutions should be the foundation for the self-building of the learners and the wider community. Education plays a very important role to ensure the survival of the state and nation and is also a mean to improve and develop the quality of human resources (Mulyasa, 2013). The quality of future human resources is determined by the quality of today's learners in which it is the biggest investment for the nation's generation that needs to be educated early. Through the learning process, the children of the nation quality can be prepared thoroughly, which is able to master the required various competences.

Education, implemented in primary school, generally covers several subjects, one of which is social science. Social science is one of the compulsory subjects given in primary school that aims to build the basic skills of the students to have a sense of nationalism, nationality, and love of the homeland as well as educating students to develop their competences and social life.

It is in line with the objectives of the social science instruction in which according to Solihatin (2011), it aims to educate and provide the basic ability of the learners in developing their competences based on their talents, interests, abilities, and environment, and as the provision for the learners to continue to education higher. Yumarlin (2012) stated that in equipping the learners in social science instruction, it should refer to the pattern of student

potential development optimally through the provision of broad opportunities so that they are able to develop their knowledge, attitudes, moral values and social skills.

Based on the experiences, the researchers found some problems both from the teachers and students. In reality, what appears to be happening in the field was a pattern of knowledge transfer in which the teacher only attempts to transfer the knowledge in his/her head to the students' without providing sufficient opportunities for them to develop their own potential. This condition has created some opinions and assumptions that social science is a boring and less challenging subject for students to learn. In addition, the teachers have lack of the mastery in many teaching models and media for the learning process so that he/she has no teaching variation in which it leads to an ineffective learning. Moreover, the learning process of social science in primary school has been emphasized on the mastery of many learning materials so that the learning atmosphere is rigid, one-way learning/ student-centered, does not provide opportunities for learners to learn more actively in the learning process of social science, as well as the use of inadequate teaching materials.

The success of a learning process, especially the learning process of social science, cannot be separated from the efforts of an educator in conveying the information to the learners. The social science instruction approach used by teachers should be based on activities that enable students to actively seek, explore, and discover the concepts and principles of social science instruction thoroughly. Thus, learners will be trained to discover the various concepts in each learning process by themselves. The teachers can also apply a scientific approach so that the learners can gain direct understanding and experience during the learning process.

The scientific approach is intended to provide the learners an understanding in knowing and comprehending various materials. The application of a scientific approach in the learning process involves the concept understanding of observing, questioning, experimenting, analyzing and communicating (Paut, 2016).

According to Hamdani (2011), in addition to the proper use of learning approaches, the use of teaching materials must also be appropriate so that the learning objectives can be achieved. Teaching materials are a set of materials that are organized systematically, both written and unwritten in order to create an environment or atmosphere that allows learners to learn.

Teaching materials play an important role in ensuring the effectiveness of teaching and learning activities, good teaching materials are teaching materials that can accommodate the learners in understanding the subject and able to help the learners to solve and provide solutions to problems they found in everyday life.

According to Prastowo (2014), teaching material is a book arranged in a systematic language that is easily understood by the learners. Therefore, it is adjusted to the learner's level of knowledge and age to enable them to study independently with or without teacher guidance.

Learning, with the use of teaching materials, will create more effective learning, since the teaching materials are developed based on the needs analysis of the learners (Rufii, 2015). The development of teaching materials is based on the needs of learners and teachers, the characteristics of the learners, learning analysis, learning strategies, and literature review. By using teaching materials, teachers act as facilitators in the learning process. Furthermore, learning with the use of teaching materials should be in accordance with the principles of learning process and apply student-centered learning. From the point of view of the learners, teaching materials are a necessity in developing their independence and performance.

Teaching materials developed based on the needs analysis of the learners may help teachers in organizing teaching materials and conducting the assessments. In addition, it can help the learners to learn independently and involve them in class activities. Thus, the learners are able to build their knowledge and gain meaningful learning experiences because they regularly practice to connect one concept with another. The results of large-scale trials conducted by Leasa et al. (2016) showed that the teaching materials in the form of thematic modules can improve the cognitive achievement of the learners not only at low cognitive

level but also at the highest level. The cognitive skills that the learners gain after using the module are the skill to analyze, evaluate and create. The findings are very different from the previous learning condition in which the student only develops low cognitive skill (C1-C2) in which they only memorize a concept. So, it can be said that the use of teaching materials in the learning process can improve student learning outcomes.

Furthermore, the effectiveness of teaching materials has been tested and found from the results of research conducted by Alias & Siraj (2012). Based on the findings of her research, it is known that the teaching materials/ modules developed based on the needs analysis of the learners is very effective for those who have a visual, active and reflective learning styles. Based on the findings of this research, it can be concluded that the use of teaching materials in the learning process can facilitate learners with different learning styles.

Currently, the use of teaching materials in primary school teaching is rarely used. The use of teaching materials in the learning process can be found in some private schools. The available teaching materials only contain the learning materials without being equipped with Student Work Sheets (LKPD). In addition, the layout of the teaching materials is so monotonous so that the learners have less interest to use it. Furthermore, in public primary schools, the teaching materials are available in the form of a printed book borrowed from school or purchased by the students themselves and student work sheets came from publishers or student work sheets made by teachers themselves.

This condition appeared in SD Negeri Kragilan 1 of Serang Banten District. Based on the observation, it was known that the teaching materials used in this school were in the form of a printed book of 2013 curriculum that students bought from bookstores and the LKPD written by the teacher. The available teaching materials contained the learning materials that were still abstract, had not enough information about a material and had lack of visualization in supporting the learning materials. Supposedly, teaching materials contain interesting pictures as material support so that the learners can easily understand the concept and feel interested to learn it.

Based on the results of interviews conducted to 5th-grader teacher of SD Negeri Kragilan 1 of Serang Banten District, it was found that the teachers experience obstacles in teaching and learning process related to the teaching materials. The obstacle was that the government did not provide printed books for the learners so that learners should buy the books in the bookstore and usually the theme to be studied has not been available at bookstore. It made the teacher to search for material from the internet. The available books did not cover the material in depth, so teachers usually combine two to three books or even more in the learning process. Another obstacle was the time limitations of teachers in teaching and catching up learning materials in which the needs of some learners were not served appropriately. Therefore, some learners must learn independently to understand the concept and the material in depth. However, teaching materials used did not lead the learners to be active in the learning process and build knowledge independently.

The results from the questionnaire showed that 100% of students mentioned that they had never used teaching materials and 100% of students agreed to develop teaching materials for social science instruction. Based on the observation, interviews, and questionnaires, it could be seen that the available teaching materials could not meet the needs of the learners. Therefore, it required teaching materials or learning process that leads to the development of the learner's thinking. One of which is printed material that students can use independently to understand the concept and the materials in depth which is supported by visual image as supporting materials.

The researchers are interested in developing teaching materials for social science instruction that can help learners actively engage and develop their thinking patterns in solving various problems in the environment. Thus, the learners will become accustomed to solve real-world problems and are ready to face future challenges.

Based on the above background explanation, the researchers are interested in conducting a research and development, namely developing teaching materials for social science instruction with interesting, effective, and fun contents for the learners. Furthermore, the teaching materials that will be developed include the elements in the form of teaching

materials in scientific approaches including: description and components of scientific approach, guidance on the use of teaching materials, competence contents of 2013 curriculum (core competences and basic competences), learning indicators, learning objectives (competence to be achieved), introduction or greeting at the beginning of learning, material description, work practice or worksheet, evaluation, feedback and follow-up, formative tests, summative tests, answer keys, and references. Thus, the research will be conducted under the title "Developing Teaching Materials in Social Science for Grade 5 of Primary School on the Subject of Economic Role".

METHODS OF RESEARCH

This research aimed to produce a product of teaching materials in social science for grade of primary school. This research was conducted at the primary school of SD Negeri Kragilan 1 of Serang Banten District. In addition, the research was conducted in the academic year of 2017 - 2018. The research and development method used to design the teaching materials in social science was a research model developed by Dick and Carey (2009:6-8). Dick and Carey's model of instructional designs include the following 10 steps or stages:

- Conducting preliminary study (needs analysis to identify the learning objectives). The preliminary study was conducted before the research steps were carried out. At this stage, the researchers performed the needs analysis by conducting observation to see the situation of the class, the learning process and discussion, interview with the teacher of grade 5, and distributing the questionnaire to the students.
- Conducting the instructional analysis. The aim of this stage was to determine the steps of the appropriate learning activities to achieve the learning objectives. In conducting the instructional analysis, the researchers determined the skills, knowledge and attitudes that were necessary to start the learning process. This stage was performed to know the initial competence that must be mastered by learners before studying the material of economic role. To master this material, the learners were expected to develop creative thinking skills, so that they are able to understand, explain and apply the concepts and processes of social science that they had learned in school to their everyday lives.
- Analyzing the students (in the context of learning) or analyzing the characteristics of the learners. The aspects to be found out at this stage included the talent, learning motivation, thinking skills, interest or early skill in order to know who was becoming the user of product development, class, age and in what situations the product development would be used. At this stage, it was determined that the user was 5th grader students aged 10-12 years. According to Piaget's cognitive development, the age is at a concrete operational stage. The characteristics of students at this age have more complex level of thinking skill, have high curiosity to recognize the environment, and show a certain talent so that the needs of self-actualization is complex. Therefore, the concrete things around the environment of the learners could be used as an example in the learning process so that it would help learners to understand the concepts of social science in concrete.
- Formulating the performance objectives. At this stage, the researchers described what the learner would do or perform, mentioned the purpose, and provided the conditions to achieve the learning objectives. Based on the results of instructional analysis, specific competences or objectives (instructional objectives) were developed to achieve the general learning objectives (instructional goals) by formulating specific indicators in the form of criteria of achievement in accordance with the basic competences of the learners.
- Developing assessment instruments. At this stage, the researcher determined the assessment tool according to the model behavior and determined the design of the instrument. The instruments were used to find out the specific objectives to be achieved. The instrument used was test. The evaluation sheets on pretest and posttest served to measure the skill before and after applying the product that was developed in social science instruction on the subject of economic role. Therefore, the form of the question used was multiple choice containing as many as twenty questions.

- Developing learning strategies. After performing the analysis stages, the information that has been obtained were used to decide an effective strategy for the learning process. In this research, the researchers applied scientific approach for the learning process. The learning atmosphere was designed using scientific approach based on the characteristics of the learning process of social science instruction in primary school which was expected to achieve specific objectives. The use of scientific approach was also expected to create a fun learning process in social science instruction, learning in the context of real-world situations and more easily understanding a concept.
- Developing and selecting the learning materials. At this stage, the researchers chose and designed the teaching materials that would be used for the product. The teaching materials were compiled and developed by applying scientific learning approach to enable the students to study social science on the subject of economic role. The instruction with the teaching materials of social science was a learning model that was designed as independent learning materials. Thus, the learners could understand the concept of social science and apply the concepts and processes of social science they had learned in school to their everyday lives.
- Designing and developing formative evaluation. After the draft or design of the learning program had been developed, the next step was designing and conducting a formative evaluation. Formative evaluation was conducted to collect the data related to the strengths and weaknesses of the teaching materials in social science during the development of the product. The aim of formative evaluation was to improve or assess the progress of the product and the developed design. The stage of formative evaluation included validation stages from the experts and individual, small group and large group trials.
- Revising the instruction or conducting instructional revision. After the researchers conducted a formative evaluation, the next step was revising the draft of teaching materials in social science that was still in the form of the design of a product. After conducting the trial, the teaching materials were revised in accordance with the acquisition of inputs and results. The data obtained from formative evaluation procedures were summarized and interpreted to determine the weaknesses of the teaching materials in social science.
- Developing summative evaluation. Summative evaluation was conducted after the product was evaluated formatively and revised in accordance with the standards used by the designer. The summative evaluation did not involve the program designer but involved independent assessment. It was one reason to suggest that summative evaluation was not classified into the design process of the learning system.

RESULTS OF STUDY

The following are the findings from the development stage of the teaching materials in social science for grade 5 of primary school on the subject of economic role.

Pre-production. Before conducting a further production stage, the researchers firstly analyzed the needs by using interview, questionnaire and literature review. Based on these results, it could be concluded that learners needed teaching materials that were able to develop the competence of the learners. Therefore, all learners agreed with the development of books such as teaching materials in social science learning. The learners needed instructional books that could be studied independently which contained complete, concrete and colorful materials, illustrations, and supplemented with learning activities and questions for practice. Moreover, the researchers worked with various parties to complete the product that had been planned previously.

Production. These teaching materials in social science applied some steps that included:

- Instructional Analysis:

Instructional analysis step was performed so that the product of the teaching material produced was in accordance with the applicable curriculum and the characteristics of the students with their environment. The developed teaching materials in social science referred to the 2013 curriculum of theme 8 (eight) entitled the environment is our friend. The first step carried out by the researchers was looking at the basic competences of social science (IPS) for the learners in grade 5 of primary school. In the second step, the researcher analyzed the student textbooks given by the government for grade 5 of primary school relating to the material or subject on the economic role.

- The Aims of Developing Teaching Materials in Social Science:

The development of these teaching materials in social science aimed to help the students of grade 5 of primary school to learn independently and help them to improve their understanding and thinking skills on the subject of economic role. These teaching materials could facilitate the learners to learn more easily, concretely and attractively in achieving the learning objectives. In addition, the learners could learn independently and assess their own learning outcomes in order to understand the shortcomings within themselves better. The material presentation in this teaching material was presented in various ways to accommodate student learning styles. This teaching material helped the teachers to concretize the abstract concepts within textbooks through illustrated illustrations in which it would facilitate the realization of success in the learning process.

- Determining the Title of the Teaching Materials in Social Science:

The next step, after determining the learning objectives, was to determine the appropriate title for the teaching materials. The developed teaching materials in social science took the title "Let's Know More about the Economic Role for Grade 5 of Primary School".

- Selecting the Physical Design of the Teaching Materials in Social Science:

At this step, the physical design was selected for the teaching materials in social science for 5 graders of elementary school with an attractive design which included figures in accordance with the learning activities on the subject of economic role.

The next stage of the development process of the teaching materials in social science on the subject of economic role was to conduct a feasibility test. Feasibility test was conducted through expert judgment, one-to-one tryout, small-group tryout and field tryout. Expert judgment involved linguists, material experts and media experts, and teachers of grade 5 of primary school.

Table 1 – Expert Judgment

Aspects	Scores
Language	73.33
Materials	94.0
Teaching materials/ Media	92.0

The description of the score had the scales of: a) 0 - 20% = Very poor, b) 21% - 40% = Poor, c) 41% - 60% = Fair, d) 61% - 80% = Good, e) 81% - 100% = Very Good. From the results of the expert judgment, it showed that the language aspect within the teaching materials was good, the material aspect was very good, the teaching materials/ media aspect was very good and the assessment given by some teachers was also good. It could be concluded that the teaching materials in social science for grade 5 on the subject of economic were feasible for use.

One-to-one test on the evaluation of teaching materials in social science was performed by distributing questionnaires to three students who had different competences. Based on the results of the questionnaire analysis, the learners as a whole were good but there were some constructive findings and inputs. The use of the activity guide was clarified and the language was adjusted with the student's language.

Small-group test was performed by distributing questionnaires to 16 students. The results of the questionnaire analysis suggested that the learners as a whole were excellent. There were two kinds of field tryout, namely: a) product conformity test and b) pretest and

posttest. Product effectiveness test was conducted on 33 respondents who joined social science instruction in grade 5 in Kragilan Sub-District of Serang Banten District. The tryout was performed by conducting the test on the learning outcomes through pre-test and post-test which was calculated using the t-test.

Table 2 – The Description of the Data

Description	Pre-test X_1	Post-test X_2
Total	2240	2735
Average	67.87	82.87
Highest Score	80	100
Lowest Score	50	60
Standard Deviation	7.074	11.860
Number of Respondents	33	33
$\sum_{i=1}^n X_i^2$	153650	
$\sum_{i=1}^n Y_i^2$		231175
$\sum_{i=1}^n X_i Y_i$	35520038750	

Statistical hypothesis:

- $H_0 = T_{count} < T_{table}$ = There is no significant difference between pre-test and post-test in the instruction of social science on the subject of economic role.
- $H_1 = T_{count} > T_{table}$ = There is significant difference between pre-test and post-test in the instruction of social science on the subject of economic role.

Preparing the supporting data to perform t-test.

- The average score of pre-test (X_1), post-test (X_2). The average score of pre-test (X_1) = 67.87 and post-test (X_2) = 82.87
- The standard deviation of pre-test (S_1) = 7.074 , post-test (S_2) = 11.860
- The number of respondents (n) = 33
- Correlation coefficient (r) = 0.125

The t-test calculation. The t-test formula used can be seen in Eq. (1).

$$t = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2} - 2r\left(\frac{S_1}{\sqrt{n_1}}\right)\left(\frac{S_2}{\sqrt{n_2}}\right)}} \quad (1)$$

The Decision of the Test. The results of the t-test showed that $t_{count} = -6.61$ and $t_{table} = -1.962$ in the level of significance $\alpha = 0.05/ 95\%$. Thus, $t_{count} = -6.61 < t_{table} = -1.962$, so the decision of test is H_0 = rejected.

There is significant difference between pre-test and post-test in the teaching materials of social science used by the learners on the subject of economic role in grade 5 of primary school.

Based on the data analysis above, it can be seen that the $t_{count} = -6.61 < t_{table} = -1.962$ in the level of significance $\alpha = 0.05/ 95\%$. It can be concluded that there is difference between pre-test and post-test of the learner outcomes. Thus, the use of the teaching materials in social science on the subject of economic role used for grade 5 students is effective because there is an increase in learning outcomes from the average of student scores from 67.87 to 82.87 which has a difference of 15.00.

Student response to the teaching material in social science on the subject of economic role is very good. It can be seen from the overall average score of 93.27. These findings suggest that the produced teaching materials in social science as a whole are considered as excellent.

DISCUSSION OF RESULTS

The success of a learning process cannot be separated from the efforts of an educator in conveying the information to the learners. Teaching materials are a set of materials that are organized systematically, both written and unwritten in order to create an environment or

atmosphere that allows learners to learn. According to Prastowo (2014), teaching materials play an important role in ensuring the effectiveness of teaching and learning activities, good teaching materials are teaching materials that can accommodate the learners in understanding the subject and able to help the learners to solve and provide solutions to problems they found in everyday life.

The findings of this research have resulted in a printed book product in the form of teaching materials in social science on the subject of economic role for grade 5 of primary school by using scientific approach. The scientific approach was intended to provide understanding to learners in knowing and understanding various materials. The process of applying the instruction by using the scientific approach involves understanding concepts such as observing, questioning, experimenting, analyzing and communicating or known as 5M (in Indonesia). Rufii (2015: 9) suggested that the instruction implemented by using teaching materials will create more effective learning process.

CONCLUSION

Based on the findings of the research and development, with a series of evaluations and revisions of the results of the test through expert judgment, one-to-one tryout, and small-group tryout, this teaching material in social science could be considered feasible for use with the average criteria of excellent. Meanwhile, in terms of effectiveness, through field tryout, the teaching materials in social science could be considered as effective with the calculation of t-test on the pre-test and post-test. In addition, students' responses to learning activities of social science by using books in the form of printed materials for grade 5 of primary school were also very good.

The teachers may utilize and implement these teaching materials in social science as one of the learning resources in the learning activities of social science in primary school. The use of teaching materials can help learners in improving their competence and providing motivation in the process of teaching and learning activities. This teaching material is not only used as a learning resource in the classroom but it can also be used individually as an independent study material.

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