

Development of Thematic Textbook Based on REACT Strategy at Elementary School

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Abstract: The purpose of this research is to find out the thematic textbook feasibility and to identify the importance of the development of thematic textbook based on REACT strategy on thematic learning for the IV grade students at elementary school. This REACT strategy is combined with scientific approach which has been implemented in 2013 curriculum. The research model used is research and development model (R&D). The product development is done through the steps of the design model of ADDIE learning system, including (1) analysis, (2) design, (3) development, (4) implementation, and (5) evaluation. This research is conducted within 3 steps, namely (1) analysis, (2) design and (3) development. Data collection include interviews, observation, and questionnaires. The result of thematic textbook based on contextual teaching and learning through REACT strategy on thematic learning have excellent quality and are appropriate to be applied for the IV grade students. This is based on the validation results from materials experts, media experts, linguistic experts, and 15 learner trials (students) and teacher. The results are shown from the average score of the product as much as 4, 42 in the material aspect, 4, 35 in the media aspect, 4, 51 in the linguistic aspect, and average score as much as 4, 69 taken from the IV grade teacher and students as the product users.

Keywords: elementary school, REACT strategy, textbook, thematic learning

INTRODUCTION

Education is a very important and strategic field in national development, because the quality of education is one of the progress nation determinants. The education process becomes an inseparable or integral part of human resource development. Education at the elementary school level plays an important role in this effort. Sumantri and Syaodih (2009: 613) argues that elementary school is a basic level of education in Indonesia that has a very important role in efforts to improve the quality of human resources. Education in elementary schools especially in Indonesia is held for six years starting from the age of six to eleven. Moweslian (2010:08) suggested that: "Elementary schools usually serve children between the ages of five and eleven years, or kindergarten through sixth grade. Some elementary schools comprise kindergarten through fourth grade and are called primary schools. These schools are usually followed by a middle school, which includes fifth through eighth grades. Elementary schools can also range from kindergarten to eighth grade".

Education in elementary schools is the basis of the next education stages, so the quality of this level education needs to be considered well. One of the efforts to improve the education quality is being pursued by the government in Indonesia is curriculum change. The latest curriculum change in Indonesia is from the Education Unit Level Curriculum (KTSP) to the 2013 curriculum. This 2013 curriculum has been implemented in some elementary schools grade 1 through grade 6 in Indonesia. The 2013 curriculum at the elementary school level uses thematic learning models. Integrative thematic learning consists of various disciplines or subjects. Fogarty (2009: 92) says integrative thematic is "the integrated curricular model represents a cross-disciplinary approach similar to the shared model". Integration across disciplines uses themes. Trianto (2011: 147) explains that thematic learning is interpreted as a

learning process that is designed based on certain themes. In the discussion, the theme is viewed from various subjects. Furthermore, Daryanto (2014: 3) argues that thematic learning is defined as a learning that uses themes to link some subjects to provide meaningful experiences to the students. In addition, the 2013 curriculum emphasizes the modern pedagogical dimension in learning, which uses scientific approach. This is found in Permendikbud No. 65 (2013) about Basic and Secondary Education Process Standards that scientific approach must be included in learning in the 2013 Curriculum. Based on the copy of Attachment IV Permendikbud No. 81 A (2013), the scientific approach includes five main learning experiences namely observing, asking questions, gathering information or trying, associating, and communicating.

The implementation of the 2013 curriculum which is still relatively new has several challenges. Abidin (2016: 24) explained that one of the teachers challenges in implementing the 2013 curriculum was learning resources. Learning resources can be defined as information, tools and / or lessons needed by teachers to plan and review the implementation of learning (Hamdani, 2011). Learning resources are considered as important components for teachers and students in the learning process. One type of thematic learning resources that needs attention in this case is the teachers and students thematic books. The 2013 curriculum book used by teachers and students now is teacher and student book provided by the government. In practice, government books used by teachers and students in the learning process seem to have some weaknesses both in the content and material. Teacher books and student books currently used in elementary schools are not sufficient for learning needs. Krissandi's research (2015) find that one of the obstacles of elementary school teachers in implementing the 2013 curriculum is limited availability of thematic books. One of the weaknesses of the book is that students' books which are supposed to be contextual are considered to be very textual. Thus, it makes teachers and students have to find other teaching materials or additional materials that can be used in the teaching and learning process. The problem teaching materials lack which used by teachers and students is evident from the interviews and observations results of several elementary school teachers at Wonogiri.

Based on interviews and observations it is known that teachers and students have not thematic teaching materials enough to support thematic learning in the implementation of the 2013 curriculum. Teachers only use thematic teaching materials from the government as the main guide in learning. The teacher uses other accompanying teaching materials, in the form of material books and student worksheets (LKS). The teacher feels they needs alternative alternative thematic teaching materials, which provide deeper material references which relevant to the competency to be achieved. In addition, teachers also need teaching materials that provide exercises which relevant to learning material. Based on the interview results it is known that students feel bored with the teaching materials available and feel their material understanding is still lacking. It is indicates that meaningful learning is not obtained by students in this thematic learning. Students need interesting thematic teaching material and makes them understand the material easy.

Based on the description above, it is necessary to develop teaching materials to fill learning needs. One of the teaching materials that can support student learning is textbooks. APEID (1976) a textbook was defined as a set of learning opportunities organized around a well defined topic which contains the elements of instruction, specific objectives, teaching learning activities and evaluation (Padmapriya, 2015). Matthews & Robert (2012) states that the use of the textbook media is one of the sources of science in proper learning. It can bring the dominant influence to the child's life with the learning world environment in accordance with the development and maturity that is harmony with instructional goals. It can bring the dominant

influence to the child's life with the learning world environment in accordance with the development and maturity that is harmony with instructional goals. So that learning objectives can be achieved. Textbook is a learning material which is learnt by students with different learning time ability (Kurniawati, 2013). So students can learn independently with the textbooks,

In addition beside the use of teaching materials, approaches, models, methods, techniques or strategies that are appropriate and interesting which are then implemented as a base for teaching materials will also affect the interests of students in following the learning process. One effort that can be done to realize this learning is to design teaching materials based on contextual learning. Contextual learning is learning that is felt to increase the meaningfulness of thematic learning because students can associate concepts with students' real experiences and environments. Context based learning theory supplies the knowledge in various contexts related to the students' own field. The students make a connection between the content of given knowledge and their real lives, therefore, the students acquire the knowledge rather than memorizing it (Acar and Yaman, 2011). Contextual learning, focused on seeking information in an individual relationship with learning activities, help learners to acquire the knowledge naturally (Johnson, 2002). Context based learning built upon real world's materials is proved to be useful, especially for science students. The contexts, based on science instruction, increase students' interests and effect their motivation positively. Students discover the meaningful relationship between content of the instructions and their practical applications in the real world (Tural, 2013).

The REACT strategy is one way to practice contextual learning. An organization called the Center of Occupational Research and Development (CORD) created this strategy as a result of studies conducted because of problems encountered in Mathematics and Science. The REACT strategy is part of contextual learning that takes place more naturally in the form of students working and experiencing, not the transfer of knowledge from teacher to student, as conventional learning models or lectures (Putra, 2013: 242). REACT Strategy has five strategies that must be seen in learning, namely: 1) Relating is learning by linking the material being studied with the context of real life experience or prior knowledge. 2) Experiencing is learning that makes students learn by doing activities (learning by doing) through exploration, discovery, search, problem solving activities, and laboratories. 3) Applying is learning by applying concepts that have been learned to be used, by providing realistic and relevant exercises. 4) Cooperating is learning by conditioning students to work together, share, respond and communicate with other learners. 5) Transferring is learning that encourages students to learn to use the knowledge they have learned into new contexts or situations that have not been learned in the classroom based on understanding (Crawford, 2001). Shoimin stated that as a strategy in contextual learning, REACT with the five stages is expected that students are able to achieve maximum competency. (2015: 41). Furthermore Utay and Calik (2011) argue that learning with the REACT strategy makes the teacher act as a facilitator and students actively play a role in learning, namely in constructing knowledge, applying knowledge gained to solve problems, expressing opinions and applying concepts to solve more complex problems. (Fensham, 2009) said that the learning process based on the REACT strategy has a positive effect on students' attitudes and increases their success. Students develop meaningful relationships between academic content and the context of their fields and experience individual activities with collaboration.

Research by Asmahasanah (2018); Faisal (2005), proved that learners who learn to use teaching materials developed by REACT strategy is able to bring new atmosphere, students are

motivated to enrich the learning experience so that learning outcomes increased. Nugroho (2018); Rohati (2011) also proved learning outcomes increased through REACT strategy. Another research, Utami (2016) also concluded that the application of the REACT strategy proved to be effective in enhancing Geography skills, Bilgin (2017) concluded that the REACT Strategy was effective in increasing the conceptual understanding of students on particulate nature of matter, Suryaningtyas (2017) was effective in improving connection skills mathematical grade 5 elementary school students. Based on the discussion above, the development of teaching materials that will be carried out is the development of thematic textbooks based on REACT strategy. The content in this thematic book is contextual and accommodates the 5 steps of the REACT strategy. Because the current 2013 curriculum requires that a component of the scientific approach be present in every learning practice, the textbook that accommodates the 5 steps of the REACT strategy also will not abandon the 5 activities in the scientific approach, namely observing, asking, trying, reasoning, and communicate. In addition, textbooks will be made as attractive as possible and meet the needs of curriculum and learning.

Based on the description above, the main problems / questions in this study are: (1) what is the procedure for developing thematic textbook based on REACT strategy? (2) What is the quality of the thematic textbook based on REACT strategy? The purpose of this study are: (1) to identify the procedure of developing thematic textbook based on REACT strategy; (2) to identify the quality of the thematic textbook based on REACT strategy.

METHOD

This study uses the *Research and Development* method. Gall, Gall, and Borg [14, p. 569] defined that, “*Educational research and development (R & D) is a process used to develop and validate educational products. Goal of educational research is not to develop products, but rather to discover new knowledge (through basic research) or to answer specific questions about practical problems (through applied research)*”. Based on this statement, it could be understood that the research and development in education is a process used to develop and validate educational products and aims not to develop products, but to discover new knowledge (through basic research) or answer specific questions about practical issues. The development procedure in this study is adapted from the model of ADDIE learning system design, include. (1) analysis, (2) design, (3) development, (4) implementation and (5) evaluation. However, this study was only divided into three steps. This research development started with the analysis phase, using preliminary study consisting of interviews, field observations and literature review from the latest curriculum. Furthermore, the design phase aimed to design the product based on the results of the analysis obtained. Once designed, the development was carried out to identify any weaknesses on the initial product designed through two stages: (1) expert validation and (2) preliminary field trials.

The data obtained in this study were quantitative, taken from the questionnaires of expert validation, preliminary field testing activities which were conducted over 15 students in SD Negeri 1 Wonobojo. The data obtained through observation and questionnaires were then analyzed and trials. Expert data, field trials were used to determine the feasibility of the product. The data analysis technique used was descriptive statistical analysis. The quantitative data were then converted into qualitative one using scale 5 as follows.

Table 1. Conversion Of Quantitative into Qualitative Data

Interval Score	Score	Category
$X > 4,21$	5	Very Good
$3,40 < X \leq 4,21$	4	Good
$2,60 < X \leq 3,40$	3	Adequate
$1,79 < X \leq 2,60$	2	Less
$X \leq 1,79$	1	Least

RESULTS AND DISCUSSION

This research is divided into three main steps, namely analysis, design and development. The results of this study include: 1) the needs analysis results obtained from interviews and observations conducted on teachers and 4th grade students at Elementary Schools in Wonogiri Subdistrict, one of them in SD Negeri 1 Wonoboyo, 2) the results of the validation of teaching materials by media experts, linguists, and material experts and 3) the results of limited field testing to 15 students at SD Negeri 1 Wonoboyo.

1) Analysis

Based on the results of interviews and observations note that teachers and students have not thematic teaching materials enough to support learning. Teachers only use thematic teaching materials from the government as the main guide in learning accompanied by other thematic teaching materials in the form of textbooks and student worksheets. The teacher feels they need alternative thematic teaching materials, which provide deeper material references that are relevant to the competency to be achieved. In addition, teachers also need teaching materials that provide exercises that are relevant to learning material. Based on the interview results it is known that students feel bored with the teaching materials available and feel their material understanding is still lacking. Students need interesting thematic teaching material and makes them understand the material easy.

2) Design

This product is in the form of thematic textbook based on REACT strategy designed according to the expected learning objectives. Below describes a few pictures of the products that have been designed.



Figure 1. Front Cover of Book



Figure 2. Book Content



Figure 3. Exercise Questions on Book

3) Development

Furthermore, the initial product was developed to identify weaknesses that exist through two stages, namely validation and trial experts. Data from the validation of material experts, linguistics and media experts, as well as limited field trials to 15th grade teachers of grade IV elementary school students.

Table 2. Validation Results of Material, Linguistic and Media Experts

Aspect	I	II	Average	Category
Material	3, 5	4, 5	4	Good
Linguistic	4	4, 5	4, 25	Very Good
Media	3, 9	4, 63	4, 27	Very Good

Based on Table 2, it can be concluded that the average score of product ratings from expert material is 4, classified as good. The average score of product ratings from linguistic experts is 4, 25, which is classified as a very good category. The average score of product ratings from expert media is 4, 27, which is classified as a very good category. Based on expert judgment the score of the media aspect is the best aspect than the other aspects. After validating the three experts, a limited field trial at elementary school.

Table 3. Result of Students and Teacher Respon on Product

Aspect	Respondents		Average	Category
	Students	Teacher		
Book Content	4, 65	4, 75	4, 7	Very Good
Sentences Clarity	4, 57	4, 8	4, 69	Very Good
Presentation of Book	4, 63	4, 75	4, 69	Very Good
Average	4, 62	4, 77	4, 69	Very Good
Category	Very Good	Very Good	Very Good	

Based on Table 3, it can be seen the average score of the assessment aspects of the book content of the respondents i.e. the teacher and 15 grade IV students is 4, 7, classified as very good category. The average score of assessment aspects of sentences clarity by respondents is 4, 69, classified as very good category. The average score of assessment aspects of book presentation by respondents was 4, 69, classified as very good category. Based on respondents assesment the score of the material aspect is the best aspect than the other aspects.

Based on Table 3 it can be seen that the average score of teachers for all aspects is 4, 62 (very good) and the average score of teachers for all aspects is 4, 77 (very good). So the average score of respondents' or user's ratings is 4, 69 (very good).

Therefore, it can be concluded that the thematic textbook based on REACT strategy have very good quality and are suitable for application to Grade IV Elementary School students.

CONCLUSIONS

Based on the results of research and discussion, it can be concluded that the thematic textbook based on REACT strategy was developed based on an analysis of the need for the availability of teaching materials that refer to the 2013 Curriculum have very good quality and was suitable to be applied for grade IV students. It is based on the results of validation from material experts, linguists, and media experts, limited field trials which conducted 15 students and teachers. This is indicated by the score of the product as much as 4, 42 in the material aspect, 4, 35 in the media aspect, 4, 51 in the linguistic aspect, and average score as much as 4, 69 taken from the IV grade teacher and students as the product users. Based on the research conducted, the researchers give recommendations, namely: (1) teachers need to master adequate abilities to develop thematic materials and strategies as well as appropriate learning models; (2) schools need to provide a collection of learning resources that are sufficient to support learning so that students can gain rich knowledge and deep understanding.

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