

Analysis of Learning Natural Sciences through 2013 Curriculum-Based Textbooks with KTSP Patterns in Elementary Schools: Case Study at PTQ Annida Elementary School, Salatiga City

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Analysis of Learning Natural Sciences through 2013 Curriculum-Based Textbooks with KTSP Patterns in Elementary Schools: Case Study at PTQ Annida Elementary School, Salatiga City.

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Abstract

Choosing book sources as teaching materials, it is important to determine before the teacher conducts the learning process so that students do not experience misconceptions about understanding Natural Sciences from the start. This type of research is a qualitative research with a descriptive approach. While the data sources in this study were obtained from observations in the form of learning process activities and the results of interviews with third grade teachers. The supporting data is good from the Learning Implementation Plan (RPP). Student and teacher handbooks, syllabus, and teacher notes. The purpose of the study was to find out science learning through the 2013 curriculum text book with the KTSP pattern, namely the ESPS book published by Erlangga class III. In the book, it can be seen from the concept of presenting science material which is made simple, modern and makes it easier for students to master basic competencies in science learning, so that it can be applied to everyday life. The ESPS textbook published by Erlangga has referred to the 2013 curriculum in the form of subject presentations not in the form of thematic learning. Based on the analysis of the entire chapter, the 2013 curriculum text book with KTSP pattern produces a complete understanding of science concepts, fosters students' critical thinking, encourages students to be able to solve problems that exist in everyday life.

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INTRODUCTION

The emergence of the 2013 curriculum is the result of an evaluation of the previous curriculum (KTSP) (Nurhalim, 2014). Implementation of the 2013 curriculum is carried out using thematic learning which is carried out in lower grades, namely grades I, II, and III. However, in class III SD Plus Tahfizhul Quran (PTQ) Annida City of Salatiga uses a book published by Erlangga with the 2006 KTSP pattern which aims to prepare students to enter the transition in class IV. This learning is divided into several subjects, namely Science, Mathematics, Indonesian, Social Studies, Civics, and SBdP.

The material on Natural Science subject in the 2006 KTSP focuses on two aspects, namely critical thinking skills and Natural Science products. Thus, students in learning are faced with problems that exist in real life. With the ongoing interaction of students with learning objects in real terms, this condition becomes a motivation for students to improve their critical thinking (Nasri et al., 2021). Likewise, according to Asta et al., (2015) that Natural Science is related to the real life of living things and understanding all things related to the universe. In line with this, according to Dewana (in Safira, 2020) stated that IPA contains a collection of knowledge that contains facts, principles, concepts, and scientific discovery processes. Natural Science studies the entire universe systematically and discusses natural phenomena through research and observation (Sutinah, 2006). Science learning aims to make

students able to learn science concepts related to natural phenomena, everyday situations, and able to develop attitudes and skills scientifically (Acesta, 2014). In this case, the teacher can present a lesson that involves students directly. Teachers as an important component in education providers, are required to be able to implement learning that supports students' science skills (Mudawamah, 2020).

In terms of integration of books published by Erlangga in science learning, especially in class III, the emphasis is on active and fun learning processes (PAIKEM). Learning is presented in the 3M form, namely Starting, Giving Direct Experience, and Ending Effectively. With this book students are expected to be able to thoroughly master the basic competencies in science learning which can then be applied in everyday life. Based on the results of observations made to class III teachers that in learning the teacher explains material starting from Chapter 1 to Chapter III for semester I, then Chapter IV to Chapter V for semester II. The materials are Chapter 1 Objects and their Properties, Chapter II Energy, Chapter III Weather, CHAPTER IV Characteristics and Needs of Living Things, and Chapter V Growth and Development of Living Things. Whereas in thematic books, science material is integrated with other subject matter, thus causing students to experience misconceptions. At PTQ Annida Elementary School there are misconceptions in the use of teaching materials, such as: students experience confusion in grouping material based on sub-themes because they do not focus on one subject.

Based on the explanation above, the researcher is interested in analyzing the application of science learning in class III through textbooks based on the 2013 curriculum with the KTSP pattern. Researchers feel that choosing book sources as teaching materials is important to determine before teachers carry out the learning process in science subjects. The importance of the teacher in instilling the basic concepts of science from the start to students so they don't experience misconceptions about understanding natural science learning. The level taken by the researcher is class III which is included in the basic class category to understand the concept of science material with its own subject.

METHOD

This type of research is a descriptive qualitative research with a case study approach, meaning that it investigates and studies all the phenomena that are seen, heard and read. Researchers must compare, combine, and draw conclusions. Qualitative research places more emphasis on theories that have been validated and can be compiled at the time of the research based on the data collected. In this case, the research study focused on analyzing the application of science learning through the 2013 Curriculum text book integrated with KTSP in class III SD PTQ Annida Salatiga City.

The purpose of this study was to determine science learning in the 2013 curriculum textbooks with the KTSP pattern at SD PTQ Annida, Salatiga City. Data collection in this study was obtained from facts found during field research. The data sources obtained are divided into two types of data, namely primary and secondary (Ibrahim, 2015). Primary data can be obtained from observations in the form of learning process activities and the results of interviews with class III teachers. Meanwhile, secondary data can be obtained from supporting data both from the Learning Implementation Plan (RPP), student and teacher handbooks, syllabus, and teacher notes. This study used research instruments in the form of interviews and observation instruments. The data analysis used in this study is based on facts and is inductive which in the end is constructed into a theory or hypothesis (Rosarina et al., 2016). While the data analysis steps include data collection, data reduction, data presentation, and drawing conclusions.

RESULTS AND DISCUSSION

Natural Science Learning

Natural Science is a science related to product and process skills that are interrelated to one another. IPA is a science that goes through a process of observing natural phenomena and objects that is carried out continuously, systematically, regularly in the form of observations, classifications, time relationships, using calculations, measurements, communications, hypotheses, research, variables, interpretation of data, where IPA as knowledge is used as content (Sulthon, 2016).

Science learning is learning structured to support students in improving science skills through observing, assessing, researching, analyzing, classifying based on observations. According to BSNP (2010) learning science has the goal of believing and believing in the existence of God Almighty who has created the entire universe and to know the concept of science so that it can be applied in everyday life. Natural Sciences has characteristics such as a collection of knowledge in the form of facts, concepts and ideas which become scientific products from the results of scientific processes supported by scientific attitudes so that they influence the science learning process in schools (Husnah, 2020).

In the 2013 curriculum, science learning has the goal of providing students with an understanding of science and technology through the development of knowledge, attitudes and skills so that they are able to understand and solve problems that exist in the surrounding environment. Science learning, in its form, focuses on three scientific aspects, namely processes, products, and attitudes. Not only mastering concepts and theories, learning science can be said to be a process of finding knowledge from scientific procedures (Dewanti, 2019). Science subjects in the 2013 curriculum from class I to class III are not included in their own subjects. However, the absence of science subjects means that it is integrated with other subjects such as Indonesian, mathematics, and civics education. The combination of these various subjects is called thematic learning. Thematic learning is a series of themes developed from the main theme. In line with this, it is adjusted to the characteristics of low grade students so that they get learning that is appropriate to their level of development and understanding (Husnaini, 2014).

The science learning process using thematic learning has several advantages, namely first, students will learn from a learning context, because the themes taken are related to everyday life so that the learning process will run more impressively and interestingly for students; second, the science learning process using thematic can help students understand the material in an integrated manner; third, learning becomes flexible because it adds new things to the science learning process; and fourth, thematic learning is a means to integrate students in understanding scientific literacy (Setiawan: 2020). In addition, there are deficiencies in thematic-based science learning, namely:

- 1) Teachers must have skills and broad insights;
- 2) Students are required to have analytical skills, link between material, explorative, and elaborative;
- 3) Facilities and infrastructure must support science learning;
- 4) Comprehensive assessment of all aspects of science studies contained in other subjects; And
- 5) The teacher's tendency with the theme being taught (Afrida: 2021).

Science Learning in KTSP and Curriculum 2013

Based on Government Regulation Number 19 of 2005 concerning National Education Standards, KTSP is an operational curriculum that is prepared and will be implemented by each educational unit (PP No.19/2005: 4). KTSP is developed through educational resources to improve the quality of learning in each educational unit (Muhaimin et al: 2008). KTSP learning

requires the development of knowledge and skills such as management, methodical didactics, science, environment, and technology. Thus, the development of knowledge and skills must exist. Without that, learning will return to traditional methods which tend to use the lecture method. (Supriyadi, 2007). Learning objectives in KTSP are expected to be achieved by students in learning by referring to the taxonomy of learning objectives such as cognitive, affective, and psychomotor goals (Sumiati: 2010). However, there are still deficiencies in learning science at KTSP, namely: learning is still rote and does not provide opportunities for students to understand directly so that they experience development in affective and psychomotor aspects.

The advantages of KTSP: 1) the realization of school autonomy in the delivery of education; 2) increase the creativity of educational actors in implementing programs; 3) facilitate schools in developing subjects that are tailored to the needs of students; and 4) KTSP can reduce the learning load of students (Sumiati, 2010). The disadvantages of KTSP: 1) inadequate human resources to compile KTSP; 2) limited learning support facilities and infrastructure; 3) lack of coordination between policy-making components in the regions in conducting guidance with education units; 4) difficulties in reducing lesson hours (Sumiati: 2010).

Based on the research results of Dirman, et al., (2021) that learning with an integrative model has an influence on learning outcomes in terms of knowledge and skills. In thematic learning, students do not study science, Indonesian, mathematics or other subjects. Students will learn through themes that have been presented covering all subjects (Afrida, 2021). In thematic learning, indicators of Natural Sciences and Social Sciences subjects will appear in grades IV, V, and VI. However, it is different at PTQ Annida Elementary School at this time, learning in lower classes, especially class III, implements subject-based learning. Subject-based learning makes it easier for students to get specific material and makes it easier for teachers to take learning evaluations, especially in science learning. Teachers in the previous school year had carried out thematic learning but experienced obstacles. So that in the evaluation of learning in schools which is carried out once a year, there are teachers who propose to re-implement the learning process by applying the form of subjects.

There are two types of books in the 2013 curriculum for science learning textbooks, namely textbooks for students to use and guidebooks for teachers in the learning process. Science textbooks are an important learning resource and a guide for conducting learning activities (Darmayanti, 2021). The results of this study are related to the content of natural science material contained in the ESPS book published by Erlangga class III SD/MI Semester 1 and 2 which consists of five chapters, namely Chapter 1 Objects and their Properties, Chapter II Energy, Chapter III Weather Chapter IV Characteristics and Needs of Living Things and Chapter V Growth and Development of Living Things. Based on the analysis of all chapters, the 2013 curriculum textbook is patterned as KTSP which results in a complete understanding of science concepts, fosters students' critical abilities, and encourages students to be able to solve problems that exist in everyday life. In this case, the teacher must be able to integrate student achievement through three domains, namely cognitive, affective and psychomotor. So that the 2013 curriculum revision ESPS book encourages students to gain a good understanding of science concepts and can optimize knowledge, attitudes and skills.

The purpose of the ESPS IPA text book is that it is easy for students to fully master the basic competencies in science learning, so they can apply them in everyday life. Science learning in KTSP has the goal that students have the knowledge and process skills to understand science concepts, get to know objects around them, have high curiosity, be able to solve natural phenomena problems through natural science concepts, and know how to use technology to solve problems in everyday life (Sururuddin, 2009).

Furthermore, from the content of science material that is carried per chapter, it varies greatly, there is an active and fun learning process. Learning is presented in the 3M format,

namely Starting, Giving Direct Experience, and Ending Effectively. Overall, each chapter contains a simple and modern concept of presenting material with the hope that science will become a forum for students to learn about themselves and the environment as well as prospects for further development in applying it in everyday life.

Based on the explanation about the textbook above, there are several weaknesses in the ESPS class III SD/MI book, including: it does not bring up scientific approach activities, the lack of sequence of learning materials, the lack of student character content, and the dependence on the target learning material that must be taught. Apart from that, the advantages are that the material is relevant to everyday life, the material is presented full of interesting pictures, and there is a learning video QR code. This is marked by an order to scan additional material which will later be presented in video form, but students must first have the Erlbook Reader application for the video to appear. The existence of this barcode as a support for learning during a pandemic. Not only that, the textbook contains exercises, quizzes and enrichment questions that support students' understanding of the science concepts they have learned.

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CONCLUSION

Based on the results of the research, findings, and discussion that have been described above, it can be concluded that science learning is learning structured to support students in improving science skills through observing, assessing, researching, analyzing, classifying based on observations. In the 2013 curriculum there are two types of ESPS IPA textbooks, namely textbooks for students to use and guidebooks for teachers in the learning process. Based on the analysis of all chapters, the 2013 curriculum textbook with the KTSP pattern will produce a complete understanding of science concepts, foster students' critical abilities, encourage students to be able to solve problems that exist in everyday life. So that the 2013 curriculum revision ESPS book encourages students to gain a good understanding of science concepts and can optimize knowledge, attitudes and skills. Apart from that, the purpose of the ESPS Science textbook is for students to have the convenience of mastering the basic competencies in science learning thoroughly, so that they can apply them in everyday life. Furthermore, from the content of science material that is carried per chapter varies, there is an active and fun learning process.

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