IOSR Journal of Research & Method in Education (IOSR-JRME)
e-ISSN: 2320–7388,p-ISSN: 2320–737X Volume 7, Issue 6 Ver. V (Nov. – Dec. 2017), PP 28-31
www.iosrjournals.org

The Development of Science Book Based on Science Process Skill at Class V Min Tanoh Anoe, Regency of Bireuen Aceh

Maulidasari[1], FauziyahHarahap[2]*, Asmin[3]
[1]*Postgraduate Student, State University of Medan, UNIMED. Jln. Willem Iskandar Psr V Medan Estate, 20221, Indonesia*
[2] *Department of Biology, Faculty of Mathematics and Natural Sciences, State University of Medan, UNIMED. Jln. Willem Iskandar Psr V Medan Estate, 20221, Indonesia*
[3]*Department of Mathematics, Faculty of Mathematics and Natural Sciences,State University of Medan, UNIMED. Jln. Willem Iskandar Psr V Medan Estate, 20221, Indonesia*
***Corresponding Author:** Fauziyah Harahap,

Abstract: *The root of the problem in this study is that students of MIN TanohAnoe less skilled in implementing practicum work procedures, students are less likely to take into account during learning process because the implementation of the textbook is less appropriate to current student needs and less meaningful for students. This condition spurs to perform the provision of the book related to the subject matter and it is lined with the characteristics and needs of students. The purpose of this research is to develop science textbook -based skill of science process validly and effectively. This type of research is the development of Borg & Gall research. The subject of this research is students class V MIN Tanoh Anoe. The object in this study is a science textbook based science process. The applied instruments are consisted of validation worksheet and learning result tests. The analysis of data uses descriptive analysis. The results show that: (1) the comparison of students' learning outcomes taught by science book based on skill of science process is higher than the students taught by textbook; (2) there are differences in learning outcomes between students taught with science book based on skill of science process compared students taught by textbooks.*

Keywords: *Science books based on science process skill, mode development Borg & Gall, learning, Style.*

I. Introduction

School as institution of formal education is a forum to increase human resources. The quality of human beings is a part of the equation of the nation's to compete with other nations in the world. The elementary school is a formal education institution that provides educational services for children from 6 years to 11 years of science. The science subject is a lesson that studies about natural resources of environment and it aims to allow students to understand the relationships of the resources within environment and technology, as well as the utilization of resources in the environmental awareness. Therefore, teachers direct students in order to study independently and actively. In other words, teachers are only good facilitators for students. Teacher as a facilitator should be able to select a good resource for his / her students, for example in choosing the teaching book. Teachers must be able to analyze the needs of learning sources based on the material, objectives, and indicators of learning. In this case, teachers are supposed to have the knowledge and ability to identify the types of resources and the formation of the learning resources as appropriate in using them in the learning activities.

One of learning resources which is needed in the implementation of science lessons in school is teaching book. It must be in accordance with the material in order to achieve learning objectives. Teaching book is very important part to support learning process. By applying it, the performance of learning activities will run more fluently. Teachers can run their duties in ejects with the help of books. Likewise, students acquire more knowledge from teachers and books. Teaching materials have systematic structure. It explains the objectives that are achieved, motivates students to learn, anticipates inequalities in the form of provision of learning guidance to studying them, providing a large number of training, providing a summary, and a resource-oriented, individual learner oriented. According Soto (in Sukerni 2014) teaching book needs to be developed in order to be used in the realization of active, creative, innovative, effective, and fun learning.

The textbooks in learning science will improve the learning achievement in the field of science. science is an integral part of everyday life, it deals with natural phenomena which is systematically arranged based on experimental results and observations made by humans. Trianto (2007)explains that science is the knowledge gained through data collection by experimentation, observation, deduction to produce an explanation of a credible phenomenon. The science-learning process in schools emphasizes the provision of direct experience to develop competencies, explore and understand the natural world scientifically.

Semiawan, et al (2014) argue that science process skill is an approach that emphasizes the growth and development of certain skills in the learners so that they are able to process information and facts, concepts, and the development of attitudes and values are found in this thing. The learning process is designed for students to gain their own experience and knowledge, to conduct scientific inquiry, to practice their intellectual abilities, to stimulate curiosity, to motivate their ability and to improve their newly acquired knowledge. By developing the skills of processing the acquisition of children will enable to discover and develop their own facts and concepts as well as foster and develop the scientific attitude and demanded value. Thus, those skills become the driving wheel of discovery and development of facts and concepts (Trianto, 2010).

The mastery of the process of science and training is very low. According Subali (2010) the absence of an increase in the mastery of science process skills is in line with the increase in class level. Subali (2010) also adds that "the weakness of learners in science subjects in elementary school is not only in the mastery of science process skills but also on the mastery of science products".The problems that occur in school especially siswakelas V MIN Tanoh Anoe related to the teaching and learning process is the study of each textbook material varies, the material contained in the textbook does not match the characteristics of students. Because it is difficult to implement pratikum work procedures, students do not pay less attention to the lesson when lessons are involved because the textbooks are implemented in schools and the preparation is less appropriate to the needs of the students at this time, and less learning is meaningful for the students.

The mastery of the process of science and training is very low at primary school. According Subali (2010) the absence of increase in the mastery of science process skills is in line with the increase of class level. He also adds that the weakness of learners in science subjects in elementary school is not only in the mastery of science process skills but also in the mastery of science products.

The problems that occur in school especially students class V MIN Tanoh Anoe relates to the teaching and learning process. The study of each textbook material varies; the material contained in the textbook does not match the characteristics of students. Therefore, it is difficult to implement practicum work procedures, students pay less attention to the lesson. Since the textbooks are implemented in schools and the preparation is less appropriate to the needs of the students at this time, and the learning is not meaningful for the students. This condition spurs to provide the book activities relevant to the subject, the characteristics and needs of students.

To solve the above problem, it is needed to develop a teaching textbook based on the science process skill. Nowadays, science books which are available in the field, they are still based on contents, and they are not based on science process skill especially subtopic about force , because it emphasizes the students to perform the process skills, so it involves more students.

Usman et al (in Wardani, 2008) describe that the approach of process skills is a teaching-learning approach that leads to the development of mental, physical, and social skills that are fundamental to drive higher abilities within individual students. Scientific process skills are the ability of students in applying scientific methods in understanding, developing and finding science. It is very important for every student to use scientific methods in developing science to acquire new knowledge or develop the knowledge (Dahar in Noah, 2010). The skills of the scientific process involve the intellectual, manual and social skills used to build the understanding of the consciousness of the state of knowledge and to confirm or improve the established understanding (Dimyantidan Mudjiono, 2006)

Rishka's (2011) concludes that learning by approach of science process sciences affects the students' science process skill. Furthermore, the Astutyresearch (2014) also indicates that the developed students' science worksheet can improve the science process skill in science learning with improvement from 12 people to 28 complete students with minimum criteria of mastery learning is 65 and 3.28 science skill process observation sheets with very good category. The role of teachers as facilitators is to provide books which is expected to change the learning conditions from which teachers typically play a role determining what is learned into how to provide and enrich the learning experience of students in science learning. In addition, teachers also prepare textbooks that are appropriate to the student's condition.

II. Research Methodology

This research is conducted at MIN Tanoh Anoe class five, academics year 2107/2108 on science subject. It applies the development of Borg & Gall model. The developed teaching material in this research is science book with subtopics about force based on science process skill at MIN class five Tanah Anoe. The subject of this research is students at MIN Tanah Anoe Class V-1 and V-2, with the amount 60 students, and the object of this research is science teaching book with subtopic about force based on science process skill. Data collecting technique is students' result test. The procedure of this research is divided into three parts, namely: 1). Preparation and plan step, 2). Implementation step, 3). The construction of report step. It can be seen in Table 3.1

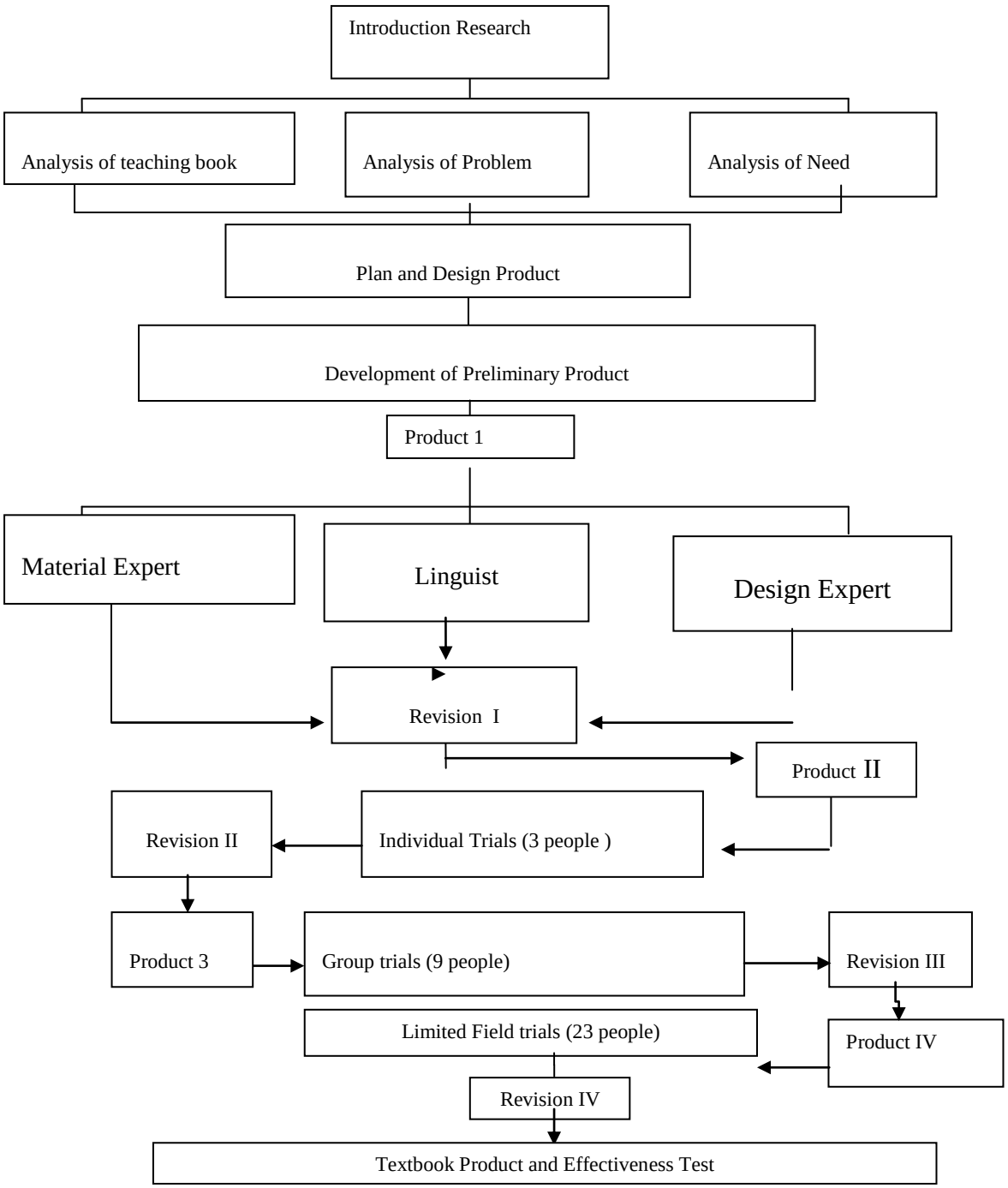

Figure 3.1 Steps of Development of a Science Textbook Based on Skills Science on subtopic Force at Class V MIN Tanoh Anoe

III. Result and Discussion

From the results of the research, it can be stated that science books based on science process skill have a higher effectiveness than textbooks. It is supported by the results of research conducted by Hartono and Ibrahim (2014) that there is interaction of student learning outcomes after using the chemistry practice manual of Hydrocarbon based on the science process skill in senior high school by obtaining 85% result of the students has been completed, and 15% of students are not complete of 45 students, there are 38 students get the value of ≥ 75 which means the student is complete and 7 students get the value ≤ 75, then 7 students is declared not complete. So it can be concluded that science learning based on thestudents' science process skill more easily understand to study the material. It can be attributed to the concept of science process skills that is one of the important of science process skills in learning because it can develop students' concepts, attitudes, and values.

IV. Conclusions and recommendations

4.1 Conclusions

The conclusions from each expert of validation on aspect of the overall assessment can be declared valid and appropriate for use in the field. Science textbooks based on science process skill are developed in accordance with the curriculum.

The effectiveness of science textbooks developed through three trials, namely, individual trials, medium group trials, and field trials. In field trials, it obtains students' learning outcomes taught by science book based on science process skill is higher than students' taught by textbooks. Then it can be concluded that science textbooks based on science process skill is effective to be developed and used

From the results of the field trial stage with science textbooks based on science process skill, it can be concluded that there is a difference between students 'learning outcomes taught by science books based on science process skill with students' learning outcomes taught by textbooks.

4.2.Suggestions

Based on the results of this study, researchers put forward some suggestions as follows:

1.Teaching book based on science process skill that has been developed, it can be used as an alternative in improving students' learning outcomes with subtopics about force so that it can be used as input in the learning process. In addition, this textbook is interesting; it is line with the characteristics of students and raises student enthusiasm.

2. Science textbooks based on science process skill that have been produced is not widely implemented in other schools yet, their dissemination is limited in the subject matter of research schools. To find out the effectiveness of Science textbooks based on science process skill and other appropriate subjects, it is recommended that teachers and researchers implement science textbooks based on science process skill in a wider scope of schools.

3. Student's enthusiasm for science teaching textbook based on science process skill is very high. Therefore, it is expected that science teachers can create an active and fun learning environment for students. Thus, students will not assume that science is a lesson that only listens to lectures and it is boring.

References

[1] Anisa, T, M ,. Supardi, K, I ,. Sedyawati, M, R, S. The Effectiveness of Approach Science Process on Chemistry Learning. Universitas Negeri Semarang.Journal of Chemical Innovation Education, Vol 8, No. 2, 2014. October 20, 2016

[2] Jihad, A danHaris, A. Evaluation of Learning (Yogyakarta: Multi Pressindo, 2013).

[3] Herman and Aslim. Development of LKPD Physics at High School Level Based on Skills Process Science.UNM Parangtambung.Prosiding National Seminar of Physics, 2015, Vol IV.

[4] Noor, M, F and Wilijen, I. Development of Applied Ssp-Based Physics CTL To Improve The Skills Process Of Science And Motivation Learning. Yogyakarta State University, 2015, Volume 1 - Number 1.

[5] Napitupulu, S, R, Development of Chemistry High School textbook class IX in Improving Students Learning Outcome, Thesis, Pascasarjana Universitas Negri Medan.

[6] Prastowo,A. The Guide to be Creative in Making Innovative Teaching: Diva Press.

[7] Rustaman,et.al.2015. Material and Learning of Science at Primary Scool (Tanggerang Universitas Terbuka, 2004)

[8] Winkle. Physiological of Learning (Jakarta: Gramedia Pustaka Tama, 2014)