Mapping the standard competencies, basic competencies, and the indicators (SKKDI) of natural science course of middle school students in curriculum 2013

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Mapping the standard competencies, basic competencies, and the indicators (SKKDI) of natural science course of middle school students in curriculum 2013

Rosane Medriati*, Sri Irawati, Rendi Zulni Ekaputri

Department of Mathematic and Science Education, Faculty of Teacher Training and Education, Bengkulu University, Raya Kandang Limun Street, Bengkulu 38371, Indonesia

*E-mail: rosanemedriati@yahoo.com

Abstract. This research was conducted by analyzing the teacher’s book, students’ book on science course of middle school in grade seven, grade eight and grade nine. Standard competencies, basic competencies and indicator mapping, cognitive and performance issues are adjusted to the 2013 curriculum. This mapping can be implemented in the classroom with a scientific approach. This study refers to the steps of Research and Development which begins with (1) preliminary study, (2) model development and (3) model validation. Result of research on teacher response to Standard competencies, basic competencies and indicator mapping is very good and study result of student increase. This can be a systematically guided teacher and material or concept that is demanded on the core competence of both knowledge and skills.

1. Introduction

Learners build mental and personality through education [1]. The curriculum 2013 focuses on students’ understanding, skills and character education. Students are required to understand the material, active discussion, presentation and have the courtesy and attitude of high discipline. Curriculum 2013, requires students to have the competence of attitudes, skills, and knowledge increased and developed according to the level of education pursued [2]. The 2013 curriculum also emphasizes the development of young national character [3].

Based on the study of several experts, it is concluded that there are some weaknesses in the curriculum of 2013. The weaknesses that need to be revised and improved and refined are 1) the 2013 curriculum contradicts law number 20 of 2003 on the national education system, since the emphasis of curriculum development is based only on aspects of pragmatic orientation, 2) teachers as important elements were never directly involved in the curriculum development process of 2013, 3) There is no balance between the orientation of the learning process and the outcomes in the 2013.

To overcome the above weaknesses, it is necessary to review the KI-1 (religion and belief), KI-2 (social), KI-3 (knowledge) and KI-4 (skills). One way is by developing competency standard mapping model, basic competence and indicator (SKKDI) which are the most important parts of the 2013 curriculum. The scientific approach is an integral part of the science subjects at the middle school.

The teachers’ book and students’ books are the book prepared by the government in the implementation of the Curriculum 2013 [4]. Teacher’s books and student books are composed by various parties under the coordination of education and culture ministries Master’s books and student books are
constantly updated, updated and updated accordingly with the dynamics of needs and changes of time. Input from various circles is expected to improve the quality of the book [5].

Teacher's books and student books are the reference for teachers in applying the 2013 curriculum, especially in designing study planning implementation and developing cognitive assessment instruments and observing attitudes and skills. However, the ability of teachers to develop indicators of basic competencies that have been determined still very less. Thus, the balance between learning process orientation and outcomes in the 2013 curriculum is difficult to achieve.

The approach implemented in the Curriculum 2013 is a scientific approach. Learning with a scientific approach is designed in such a way. So learners actively construct concepts, laws or principles through observing, questioning, experimenting, associating and networking. A work approach or process that meets the scientific criteria, puts forward inductive reasoning rather than deductive reasoning [5].

Scientific approach is closely related to scientific methods [6]. This approach involves observation or observation activities required in the formulation of hypotheses, based on the exposure of data obtained through observation or experiment.

States that the Graduate Competency Standards are the criteria of graduate qualification that includes attitude, knowledge, and skills [7]. The basic competence is the ability to achieve the Core Competencies that must be obtained by Students through learning [8]. Basic competence is a number of abilities that should be controlled learners in certain subjects as a reference for the preparation of competency indicators in a lesson [9].

Indicators of achievement of competence are observable capabilities to be summed up as compliance [2]. The Lesson Plan, basic competencies one and two of core competencies one and two should not be developed in indicators, as both are achieved through indirect learning. Indicators are developed only for basic competencies three and four because they are achieved through a direct learning process. The purpose of the study is mapping the competency standards, basic competencies, indicators (SKKDI) of natural science course of middle school based curriculum 2013, teacher response about the mapping and effectiveness of the mapping for the student middle school in grade seven, grade eight and grade nine with scientific approach.

2. Research Methods
The method used in this research is the method of research and development (R & D), which is a research process used to develop and validate the data of educational products. One of the products developed is Standard competencies, basic competencies and indicator (SKKDI) science lesson in junior high school. This model of research and development in education [10, 11] as “a process used to develop and validate educational something”, a process used to develop and validate educational products. This study refers to the steps of Research and Development that begins with (1) preliminary study, (2) model development and (3) model validation. Preliminary studies, it is an early stage for product development activities.

The steps of the activities undertaken are: a) Observation, activity survey of K 2013 implementation on science learning in grade seven, grade eight and grade nine in middle school of Bengkulu city, b) Forum Group Discussion of Science Teachers and observers of educators, c) Analysis of teacher books and textbooks of students of middle school in grade seven, grade eight and grade nine and d) Forum Group Discussion The results of book analysis of teachers and student books. Model Development the step a) Following initial draft of Standard competencies, basic competencies and indicator (SKKDI) mapping model and b) Forum Group Discussion Draft model developed with science teachers of middle school in Bengkulu City. Model Validation the steps are Standard competencies, basic competencies and indicator (SKKDI) model validation test to determine the effectiveness of the model that is produced in middle school number two, middle school number seven and middle school twenty one in Bengkulu City, each school was tested for grade seven, grade eight and grade nine produced a valid Standard competencies, basic competencies and indicator (SKKDI) mapping model.
3. Results and Discussion

A preliminary study of the implementation of K-2013 in science lesson of SMP found some important things. In terms of planning, teachers make lesson plans developed based on teachers’ books and student books. The percentage of teachers who make their own study planning implementation is 30%. Study planning implementation corrections made by teachers are only carried out by means of discussion for improvement and revision. Problems encountered during the process of correction is not all school principals and curriculum representatives have science education background. Another problem is that supervisors of National Education Institution subjects usually only one master for subject area (eg Physics and not understanding Biology and Chemistry).

The teacher book is complete and ideal but in the process of application is less than the maximum because of the facilities and condition of the school. Teachers only focus on the teacher's book, so do not pay attention to the contents and suitability of the student's book. Master has the wrong assumption that the essentials of the science materials in K-2013 are too shallow. This happens because the teacher only guides what is in the book. Teachers do not dare to change the learning objectives that already exist. So teachers rarely do the material development.

Teachers should understand the function and role of both teacher book and student book [5]. Therefore, the suitability between teacher book and student book is very important to note. This difference should be corrected immediately because it will disturb the students understanding the concept being studied. Should Standard competencies, basic competencies and indicator (SKKDI) in the book of teachers in accordance with the material on the student book so that Standard competencies, basic competencies and indicator (SKKDI) should be achieved in students can be comprehensively.

Teachers have difficulty in developing skills core competencies (KI 4). Because the basic skills of teachers to science knowledge only in one field of study. Implementation in the school teachers must master more than one field of study. For example, teachers with Biology background must understand the Physics and Chemistry skills. All science teachers must teach materials not in their field. For example, science teachers with background physics should teach Biology and Chemistry. So it affects the low value of teacher competency test results.

For Authentic assessment the teacher has his own way of appraisal. Teachers are able to assess their students thoroughly. Teachers still have difficulty in measuring cognitive and child skills. This is caused by the ability of teachers to the field of IPA study is very lacking, causing inefficiency in its application. Speaking of evaluation, the form of cognitive questions is based only on student books. Teachers are not trying to develop the problem.

Students feel uncomfortable and dissatisfied with the learning and material being taught. So, as to cause the concept of material that students understand depends on the teacher who teaches. This is because teachers only master one field of study.

Teacher's response to competency standard mapping, basic competence and indicators on science learning are very positive. Teacher responses to the mapping of competency standards, basic competencies and indicators (SKKDI) helped teachers to design the most excellent learning (66.67%), good (25%) and enough (8.3%). Teachers argue that this mapping helps them in designing classroom learning for both study planning implementation and assessment. So the practical needs for teachers can be achieved. Graph of teacher response to the mapping can be seen in Figure 1. Standard competencies, basic competencies and indicator (SKKDI) mapping comes from the analysis of teacher book and student book.
Implementation at middle school number two, middle school number seven and middle school number twenty one in Bengkulu city. The results of implementation on the use of mapping obtained pretest result of classical average of 38.475 in grade seven students, the average pretest result of classical equal to 46.068 in student of grade eight, and the average pretest result of classical equal to 48.675 in grade nine students. Based on these results there is an increase in student learning outcomes of grade seven grade eight and grade nine respectively of 36.33, 32.1 and 29.9 points. Application of model competency standard mapping, basic competency and indicator (SKKDI) mapping of teachers can make a scientific approach to science learning. Graph of pretest and posttest grade increase of students in middle school can be seen in Figure 2 below.

The essence of Natural Science consists of four components: scientific attitudes, scientific processes, scientific products and applications. Natural Science developed through the steps of observation, classification and experimentation [12]. Teachers are systematically guided against the materials or concepts demanded on the core competencies of both knowledge and skills. Students are able to absorb the material well because of the structured teaching materials that match the core competence, both knowledge competence, and skill competence [13].

4. Conclusion
Teacher response to Standard competencies, basic competencies and indicator (SKKDI) mapping 67% excellent, 25% good and 8% enough. Standard competencies, basic competencies and indicator (SKKDI) mapping is based on the results of the analysis of Master Books and Student Books by developing cognitive and performance questions in accordance with the Standard competencies, basic competencies and indicator (SKKDI) that has been determined so that it can help teachers to implement
the 2013 curriculum. Standard competencies, basic competencies and indicator (SKKDI) mapping can improve study result of the student in middle school.

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