

The Readiness and the Ability of Elementary School Teachers in Integrating Mathematics into Other Subjects on the Implementation of 2013 Curriculum

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Abstract

This study was aimed at getting description on teachers' mindset, readiness, and ability in integrating science into other subjects on the implementation of 2013 Curriculum. Participants of this study were master and targeted teachers in Palu who participated in 2013 Curriculum training. Techniques of data collection were using documents review, observation, video recording, and interview. The result of research showed that (1) teachers were still lack of insight on how to transfer the value of soft and hard skills through the teaching of science which were integrated into other subjects that include attitude competence, skills, and knowledge; (2) teachers' competence in comprehending integrated-thematic has not been developed; (3) the standard of process which focus on exploration, elaboration and confirmation has not been implemented through processing, inferring, and creating approach. Instead, the implementation is still on how to present, to observe, and to ask; (3) teachers were still have inadequate knowledge on how to apply authentic assessment to assess students' attitude, skills and knowledge based on the process and result of teaching and learning.

Key words: 2013 curriculum, science, standard of process, integrated-thematic

I. INTRODUCTION

The Development of 2013 Curriculum was conducted based on several main principles [1]. First, students' learning outcomes' standard are generated from needs. Second, standard of content is generated from students' learning outcomes standard through subjects-free core competence. Third, whole subjects should contribute to form student's attitude, skill, and knowledge. Fourth, subjects are generated from the targeted competence. Fifth, whole subjects are bounded by core competence. Sixth, coherence of learning outcomes, content, learning process, and assessment. The consistent application of these principles are essential in creating a successful implementation of 2013 Curriculum.

In order to prepare teachers in implementing the 2013 Curriculum, the Ministry of Education and Culture has conducted training for teachers who are positioned as master and targeted teachers. There are three important aspects in the training, i.e training material, the goals of training, and the use of training method. Teacher as 'a driver' of educational practice should be given many opportunities to continue to learn, to solve problems, and to improve their creativity from both other people and their own experiences. Therefore, it is very important during the the implementation of 2013 Curriculum, teachers have better understanding of the curriculum supported by a suitable system.

In this research, teachers' readiness and ability become significant points as a basic platform in designing programs that support the implementation of 2013 Curriculum. The research focused on the development of teachers training program to support the implementation of the curriculum. Through this context, the system of

training programs for elementary school teachers will be developed. The system includes materials, components, and the structure of training based on teachers' readiness and ability. The improvement and completion process of this complementary training system are based on data of teachers' readiness and ability. The data could be obtained through survey and field study (observation) related to implementation of the curriculum, either by a teacher who are master teachers or teachers who had received training by master teacher. This paper focuses on describing the results of preliminary study that has been carried out.

II. RESEARCH METHOD

The research applied descriptive approach with the main aspects of study were the readiness and ability of teachers in integrating science into overall structure of teaching and learning in the thematic framework.

Research data were obtained through documents analysis, observation, and interview. The purpose of documents review was to recognize ideal condition that should be referred or followed by all stakeholders, mainly trainers and teachers in implementing the curriculum. The process was also an effort to strengthen the researchers' insight in conducting analysis of observation and interview results. The reviewed documents were publicly tested materials, socialization materials, training handout, and teacher's and student's books. The observation was conducted during master teachers' training in Makassar, targeted teachers' training at LPMP Sulawesi Tengah and the teaching and learning activities conducted by targeted teachers in their schools in Palu. The interview was conducted to know teachers' perception on the implementation process of 2013 Curriculum.

III. RESULT AND ANALYSIS

3.1 General Description of Preparation of 2013 Curriculum Implementation

The development of 2013 Curriculum was based on the ideas of nation's future challenges that characterized by sciences century, knowledge-based society and perception of society, the development of knowledge and pedagogic, the future competence, and the trend of negative phenomena. In order to support the curriculum implementation, training for teachers was conducted. This training was aimed to prepare the teachers of in the first, fourth, seventh, and tenth grade to implement the curriculum in 2013/2014 Academic Calendar.

The teachers training in 2013 Curriculum implementation was began by the preparation activities (students' and teachers' book, and handout of teachers training), teachers training, monitoring, supervision, and evaluation of implementation. The involvement of the first and fourth grade teachers was initial step of 2013 Curriculum implementation in elementary school. Their involvement was appointed by Ministry of Education and Culture by considering the limitation of time and funding. The number of teachers from Sulawesi Tengah who participated in the training is described in Table 2.

Table 2 Number of Master Teachers from Palu in 2013 Curriculum Training

No.	Grade/Subject	School	Master teacher
1	I	3	3
2	IV	3	3
3	Sport and Health Education	3	3
4	Culture, Art and Skill	3	3
Total			12

A day after the training of master teachers in Makassar, the following training was also held for the targeted teachers organized by LPMP Palu for 4 days. The number of participants is listed in Table 3.

Tabel 3 Number of Targeted Teachers in 2013 Curriculum Training in Sulawesi Tengah

No	Grade/ Subject	School	Targeted Teacher
1	I	24	32
2	IV	25	34
3	Sport and Health Education	22	22
4	Culture, Art and Skill	22	22
Total			110

3.2 Description of Lesson Plan Development and the Implementation of Science Integration into Other Subjects in Thematic Teaching

Observation results in some schools are presented in the followings:

a. SDN 10 Palu

At SDN 10 Palu, lesson plan and schedule of theme and subtheme for each month were designed by teachers' working-group. In the implementation of the lesson plan, there was no integration of science with other subjects based on chosen theme. The teaching, the use of media and student's worksheet were still partial based on the subjects. Scientific approach was not understood well by the teacher. The scientific approach in teaching in elementary school for each theme or subject should include exploration of information through observing, asking, experimenting, analysing and presenting data, and followed by analyzing, reasoning, then concluding and creating.

Authentic assessment was still not implemented by teachers. May be, it was not yet having meaning for teachers to determine the best manner in order to all students could achieve goal of teaching, although in different time unit.

By referring to result of teacher's and student's book review, it could be seen that the teachers have not understood the student's learning outcome, core

competence, and basic competence that suitable to the theme, so that students' needs based on their psychological conditions were not optimum in the learning process.

b. SDN 03 Palu

We observed on first and fourth grade teachers as targeted teachers that have participated in the training at LPMP. The targeted teachers have showed the ability in designing lesson plan based on student's learning outcome, basic competence, and indicator that have coherence with theme. However, the scientific approach has not been seen in learning process. The teachers tend to follow the their old habits when explained each material based on the sequential of theme. Authentic assessment has not been conducted by teachers to assess knowledge, attitude and skill aspects.

c. SDN 06 Lolu

The teaching activity at SDN 06 Lolu Palu has already used LCD projector, but only limited in displaying lesson plan text given to students. The development of theme has not met the considered criteria of integrative-thematic. The criteria was still based on the teacher's or student's book. They have not integrated several subjects by considering students' condition. Teachers have not considered students psychological level of development. Another constrain in implementing 2013 Curriculum at the school is the number of students of each class. There 47 students in each class. Grouping technique by teacher was also ineffective.

d. SD Swasta Karunadipa

Before the implementation of 2013 Curriculum, SD Karundipa applied subject-based teaching for IV, V, and VI grade. Even for lower classes, there were some meetings conducted by applying subject-based teaching. Until early of September 2013, teacher has still thought theme 1, sub theme 2 of 4 sub themes. The development of teaching themes seem very slow. It should include 4 themes at the semester. The slowness was caused by the materials that included in the themes were too much.

3.3 The Analysis of Effectiveness

The initial design of 2013 Curriculum training implementation should engage lecturers as representative of higher educational institution and LPMP as partner of teachers in implementing the curriculum. However, the implementation of training was only followed by master teacher candidates and representative of LPMP. The researchers conducted observation of training activity began from Makassar (for East Indonesia Region) until the implementation of the curriculum at school or classroom in Palu. To support the observation data, we interviewed some master teachers, national trainers and targeted teachers as the main actor of the successfull of the curriculum implementation. Based on documents review, it could be explained that one of characteristics of 2013 Curriculum that should be understood by teacher as participant of training was equilibrium between knowledge, attitude, and skill in building soft skill and hard skill that included in learning outcome at each educational level, as described in Figure 1.

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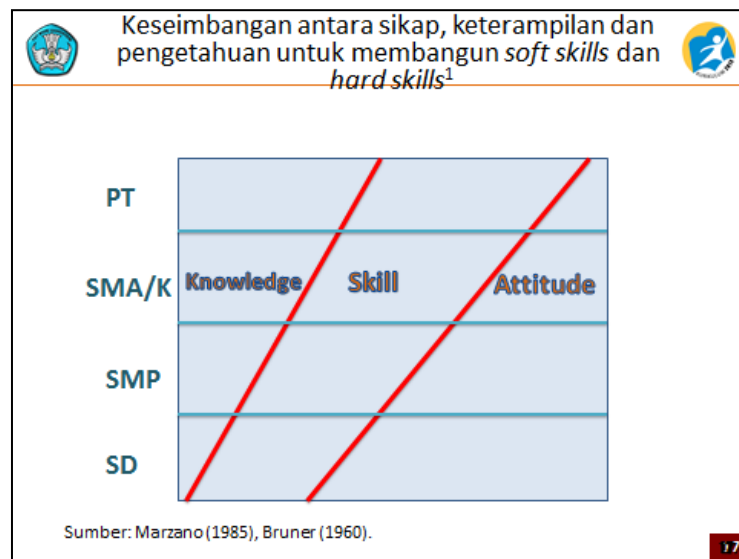


Figure 1. The portion of attitude, knowledge and skills

For learners in the lower educational level, portion of learning to build hard skill is lower than portion of learning to build soft skill. It means teachers in the elementary school level need to emphasize on soft skill. Portion of attitude and behavior development is stressed to build national character of learners. They should have good behavior but we may not avoid the knowledge aspect that could be developed from many learning sources.

From the observation and interview on master and targeted teachers, it was obtained description of teachers' insight. It could be stated that the understanding of teachers on the equilibrium between soft and hard skill was relatively low. The challenges faced by teachers in the implementation is in how to conduct teaching and learning activity based on thematic-integrated approach that is consistent with student's learning outcome, core competence, basic competence, and indicator as main goals of educational processes in the 2013 Curriculum framework.

In the conceptual level, thematic teaching is begun by constructing themes for one year. Based on the themes, teacher should analyze all learning standard of outcomes that are generated to core competence and basic competence, and should construct indicator of each subjects in the each grade. After that, teacher should construct the relationship between the indicator and the theme. From the mapping of the relationship, teacher should make network of basic competence and indicator from each constructed theme. After the forming of all themes net for during one year, teacher constructs thematic syllabi and lesson plan.

Based on the observation, the selection and the determination of developed theme at elementary schools are described in several points below:

- The constructed theme was still based on book and not integrated for many subjects. In this context, science integration into other subjects or otherwise could not be seen.
- The meaning of theme was not analyzed carefully for students to learn.
- The level of psychological development of students has not been considered yet.
- The development of themes in text books does not meet most of students' need.

- e. The chosen themes have not fully considered authentic phenomena during the teaching and learning process.
- f. Teachers are lack of creativity to choose media and learning sources.

CONCLUSION

Based on the findings presented above, the following conclusion is formulated:

1. The teachers are still lack of understanding on how to integrate soft skills and hard skills into the teaching of science.
2. Teaching management and competence development have not been developed through integrative-thematic.
3. The standard of process focusing on exploration, elaboration, and confirmation has not been implemented through analyzing, inferring, and creating approach. It is still carried out only by presenting, observing and asking.
4. Authentic assessment which is used to assess attitude competence, skills and knowledge on the basis of process and result is not well implemented by the teachers. Teachers are still lack of comprehensive understanding of what authentic assessment is.

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