Application of scientific learning for primary school social studies material: Strategies to equip students in carrying out the revised 2013 curriculum

HM Zainuddin
Professor of Social Science
Department of Primary School Program, State University of Malang, Indonesia

Im Hambali
Senior Lecturer
Department of Guidance and Counseling, State University of Malang, Indonesia

Hadi Mustofa
Senior Lecturer
Department of Primary School Program, State University of Malang, Indonesia

Abstract:
This research was aimed at providing solution to the problems of understanding and implementing the revised primary school revised 2013 social studies curriculum by developing scientific learning application using discovery learning model for social studies materials in which teacher training students were assigned as teaching model. This study used Research & Development design, assigning 23 teacher training students at Malang State University, Indonesia. Data were collected from questionnaire, interview and observation on teaching implementation. Results of process data showed that initially students were confused; shall have consulted to develop lesson plans; prepared and consulted under guidance of researchers; consulted lesson plan to researchers; revised lesson plans with advice of researchers; and were ready after a series of implementation. Results of product were: video captured overall learning steps of scientific model of discovery learning; model teacher had worked with the guidance of the revised 2013 Curriculum on social sciences teaching materials, and videolearning was eligible for learning resource for scientific learning by discovery learning model of social-sciences teaching materials for primary school.

Keywords:
Scientific learning, social-sciences, primary school.

Citation:
Zainuddin, H.M., Hambali, IM; Mustofa, Hadi (2017); Application of scientific learning for primary school social studies material: Strategies to equip students in carrying out the revised 2013 curriculum; Journal of Social Sciences (COES&RJ-JSS), Vol.6, No.2, pp: 282-290.

This work is licensed under a Creative Commons Attribution 4.0 International License.
Introduction

Pedagogically, curriculum implies educational design that serves students to develop their potential to learn enjoyable in adherence to their own abilities to comply their community and nation hopes. Curriculum can be defined as a set of educational materials and teaching for students whose educational objectives are predetermined to achieve (Idi, 2010:184). In a simple way, Kesuma (2013:31) said that curriculum is a set of lessons and activities offered by schools. Therefore, curriculum is related with education as a set of programs advocated to needs of participants in the efforts to achieve educational objectives.

To follow up the defined curriculum, it is imperative that Indonesian government designs a curriculum that immensely accommodates programs whose national education aims and objectives are set forth. Policy on curriculum reform applicable for the Primary up to Secondary school level in Indonesian is deserved as the 2013 Curriculum (henceforth, K13). Nowadays, the Indonesian Republic Government through the Ministry of education and culture has revised the 2013 curriculum which has been expected that with overall innovation of the curriculum offered can enhance the quality of education in Indonesia. On the contrary, the fact in the field was not in line with the expectation. The role of student majoring in education which should function as the motor of curriculum development has not been not effective. Based on the interview result conducted to the primary school teacher education students at the last semester in 2016 showed that the students’ understanding on the revised 2013 curriculum, public validation, and its principles of development was not adequate. This led the consideration of making students as models to implement the revised 2013 curriculum. By such intervention, students could have experience and habituation of implementing the revised 2013 curriculum, especially for the social studies materials using the Discovery Learning.

The offered opportunities to students to be the teaching models were expected to positively influence the enhancement of the students competence in implementing the revised 2013 curriculum. Students taking the roles as teaching models indirectly learned how to teach using the revised 2013 curriculum well. They would designed teaching documents and use them in implementing the revised 201 curriculum.

Discovery Learning model was chosen due to the consideration that this model was recommended to use in the scientific learning which was the basis of the 2013 curriculum development. Discovery Learning is the inductive learning model based on the discovery. Learning by discovery is a technique to help students make and manage knowledge (Honomichl & Chen, 2012:1). Discovery Learning is a learning theory defined as learning process which can occur when students are not presented the final forms of learning, but are expected to organize their learning themselves (Kemendikbud, 2013:2). In practice, teachers design learning procedures and invite students to be active in discovery process under the teachers’ guidance. Such learning is often implemented using role playing, group projects, and simulasi computer simulation (Cohen, 2008:5). The procedures of the discovery learning can be identified as (1) Stimulation, (2) Statement of problems, (3) Data collection, (4) Data analysis, and (5) Verification or Generalization (Kadri, 2015:32).

Results of previous research by Zainuddin (2016, 236) showed that the Implementation of Discovery Learning in low grade Islamic Primary School of Ma’arif Blitar was able to bring the scientific attitude on students, high curiosity and spiritual attitudes of students in activities to pray or observe activities which could bring a sense of gratitude toward
God’s Power. This is in line with the other research conducted by Boty, et all (2015:117) resulted a conclusion that through self-discovery learning and collaboration among peers, students will have the satisfaction in what they are doing and hence will have positive attitudes. The positive attitudes were meant as self confidence, fair, and critical thinking. The social studies learning was chosen, because this usually enforces the social interaction between human beings and their environment. By studying social science, students can improve social sensitivity in adaptation in social environment. Policy of the National Education stipulated in the Law 2013 article 37 states "subject of study of social sciences among others geography, history, economics, health is intended to develop the knowledge, understanding, and analytical skills of learners to the social conditions of the people." (in Sapriya, 2014:45).

Based on the above discussion this research was conducted to develop the discovery learning model which can be relevant to the scientific learning as implemented in the revised 2013 primary school curriculum and to develop skills of students majoring in the primary school education to implement the revised 201 primary school curriculum as well as develop materials mainly for the social studies. This way, as teacher candidates they can be expected as the driving forces to the implementation of the curriculum.

Method
Research Design
This research employed the Research and Development Approach. This focused on resulting product in the forms of video about the scientific learning model applying the discovery learning model for social studies in primary schools. Such product development is in line with what Ibnu (2013:3) mentioned as Research and Development does not test theory, but develop and test the model effectiveness. Whereas, Akbar (2016: 2) said that such research is aimed to validate and/or result product/equipment/tools for education and learning. Furthermore, the Research and Development mostly has resulted products as a creation functions to enhance the quality of learning.

This research was done at Kardinas Massa Islamic Primary School the so-called SDI Kardinas Massa for grade IV with 35 students. This school as chosen because of having implemented the revised 2013 primary school curriculum. It was expected that the school could provide evaluation and reflection to the teaching models as well as researchers related to the development of the scientific learning applying the discovery learning model for primary school social studies. The subjects as teaching models in this research were students of Primary School Teacher Program as teacher candidates at the State University of Malang taking the seventh semester.

Data
Data collected in this research are process and result data. The process data was obtained through : (1) questionnaires of the students readiness in implementing the revised 2013 curriculum, (2) interview on the students’ readiness in implementing the revised 2013 curriculum, (3) observation on the implementation of the scientific learning using the discovery learning model application for the social studies materials. The result data was the video of the scientific learning applying the discovery learning model for primary school social studies materials. The video was then validated for the suitability towards the revise 2013 curriculum development in primary schools done by experts of curriculum and learning as well as teachers and primary school students.
Procedures
The steps and procedures of this Research and Development was developed by the researchers themselves using their professional experience by the following procedures: (1) Firstly, information collection which was done by reviewing literatures, observation on students learning to identify problems, (2) Secondly, Planning which was done by determining students’ competences, objectives, step, and small scale feasibility test, (3) Thirdly, initial product design: Learning materials, media, and evaluation instruments, (4) Fourthly, initial product test which was conducted by assigning the teacher models who are the students majoring in Primary School Education Program and using primary school students, (5) Fifthly: product revision on the basis of the initial product test by experts in curriculum and learning, (6) Sixthly, product improvement as results of the revision by implementing in the primary school learning, and (7) Seventhly, Desimination and sharing to schools who need the product.

Data Analysis
The data analysis process as done by employing the Research and Development Data Analysis comprising: (1) Data reduction, (2) Data display, and (3) Conclusion. Data reduction as done by selecting or choosing the collected data, focusing to simplify the data and the data display. The data display was conducted after having the data reduction by compiling all reduced information. These information were organized continuously up to the possibility to have conclusion. The information consisted of all the research description for the product testing by the experts and students’ responses towards the learning process. The Conclusion process was taking the main model concept of the product results in the form of video about the learning process which was validated by Experts Team. Results of the analysis were used to be the basis for determining the success of product result.

Result
Results of Process Data
Results of process data obtained from questionnaires and interviews were as follows: (1) Students at the beginning of preparation of lesson plan were still confused. (2) Students consulted and sought references to develop lesson plans relevant to the topic chosen. (3) Students prepared lesson plans carefully and consulted under researcher guidance. (4) students consulted the lesson plans designed to the researchers, (5) students revised lesson plans as the researchers advised. (6) Students were equipped to become teachers after a series of planning.

Implementation of this learning process was recorded as a form of documentation and design of initial product for validity test. This implementation was observed in all activities undertaken by the model teacher during teaching and learning. Observations during learning activities found: (1) Students still felt awkward to implement the chosen model, (2) The steps were not visible model of discovery in a whole, (3) on the five-step model of discovery learning, the second step and the fourth were not visible for students. (5) Time learning allotment exceeded the planned time, (6) Students were not visible to apply attitudes on nation characters, (7) classes were not conditioned properly to execute the instructional design set in Teacher Preparation Plan and teaching materials. Based on the result, the researcher developed planning and preparation for re-floating the model. Students did some repairs to learn more about the application of scientific learning model.
Application of scientific learning for primary school....

of discovery learning, studied characteristics of learning of social studies at Primary School, character of students, and reconstituted the Teacher Preparation Plan according to the results of discussions with researchers. Finally, students expressed their readiness to become a model back. In reimplementation, the researcher recorded teaching and learning process through observations. The results showed improvements on learning implementation of scientific discovery learning than before. The improvements were: (1) Students were already confident and less awkward to implement the model selected. (2) Students already had visible steps on discovery models. (3) The five-step model of discovery learning were already implemented in learning activities. (4) Learning time required in accordance with the planned time was appropriately managed. (6) Students already performed attitudes of nation characters, such as cooperation, honest, and appreciate others, critical thinking, curiosity. (7) Classes had been conditioned properly. (8) Learning activities began with a prayer and respect for the red and white flag. (9) Teaching and learning activities ended with a prayer and cleaning the classroom before going home.

Results of the Product
The results also demonstrated feasibility according to expert validation on instructional video. As a media of scientific discovery learning model, the video showed strong evidences. The results were as follows: (1) the video had contained overall learning steps of scientific model application of discovery learning, (2) the model teacher had worked with instructions of the 2013 curriculum on Studies teaching materials, (3) the video learning was eligible for use as a learning resource or reference in scientific discovery learning model of Social Studies for Primary Schools.

Discussion
Results of process data showed that model teacher at the beginning of the preparation of lesson plans still found difficulties to implement scientific learning discovery. Students in developing Teaching Preparation Plan did not yet fully understand of what was written. Impacts planned learning did not take place in the process. Measures were not applied to scientific models, so students could not follow teaching and learning activities well. In the low grade, student behaviour code did not reveal the nation's culture and learning objectives were not achieved well. Evidently, a teacher that did not have a good planning, would not produce a well teaching and learning presentation. Conversely, a good planning means would produce a good learning.

At the next session of preparation and planning students performed better, resulting teaching and learning activities as planned. Students applied all steps of discovery learning model. The five-step of discovery learning stated by Kadri (2015:32) included (1) Stimulation, (2) Statement of the Problem, (3) The collection of data, (4) data processing, and (5) verification or generalization, were well implemented. Student teacher performed attitude of scientists and behaved according to culture of nation character.

The attitude of scientists that appeared in the application of scientific discovery learning model was critical thinking, honest, and curiosity. Scientific attitude of students were identified in four aspects: curiosity, respect for facts or evidence, the ability to change the view, and thinking critically. All were included into the scientific attitude that needs to be applied early (Harlen in, Widiadnyana, 2014) The emergence of behavioural and scientific attitude after implementation of the model of discovery learning also occurred to
improve daring to ask questions to support curiosity (Ulumi, et al., 2015:75). In addition, model of discovery learning improved students' scientific attitude because this model applied direct discovery activities, centred on steps of scientific discovery that more students understood concepts they were studying (Indarti, 2014). Attitudes and behaviours were indeed required in the development of the 2013 curriculum that integrated character of education and teaching materials. In each lesson, a teacher was required to introduce and develop character values of national culture. Character education was an effort to shape attitudes and mental of students. Character education was process of providing guidance for students to be fully human character in dimensions of heart, think, body, taste, and imagination. Character education was instilled by character values to school community, which included knowledge, awareness, willingness, and actions. Implementation of these values appeared in terms of pray against God Almighty, ourselves, others, environment and nationality to become human beings (Wahyu, 2011:142).

Character education was the creation of a school environment that assisted students in development of ethics, responsibility through model and teaching good character through universal values. Character education was the earnest effort to understand, establish nurture ethical values, both for themselves and for all citizens or residents of the country as a whole (Bier and Berkowitz, in Supraptiningrum, 2015:221). Character education had to be implemented in learning activities. The characters included various aspects of life ranging from aspect of state, scientific, and environmental society. The characters were implemented as: (1) religious, (2) to be honest, (3) tolerance, (4) discipline, (5) work hard, (6) creative (7) independent, (8) democratic, (9) curiosity, (10) the national spirit, (11) loving the country, (12) rewarding achievement, (13) friendly or communicative, (14) love peace, (15) joy of reading, (16) environmental care, (17) social care, (18) responsibility (Putri, 2011:9). The results also showed that model teachers observed not only student learning outcomes of knowledge, but also attitudes and skills. Such behaviour of teachers indicated good implementation on the revised 2013 curriculum. Indeed, this curriculum required assessment on student learning outcomes in three aspects: knowledge, attitudes, and skills. Actually, the assessment was not new in the system of assessment of learning outcomes in Indonesia. Formerly, the assessment was known as (1) Cognitive, (2) Affective, (3) Psychomotoric.

The results supported diversity of three aspects of students' abilities. Not all students were proficient in the knowledge; some were skilled in the act and some others were unskilled. These three aspects were identical to (1) skills and habits, (2) knowledge and direction, (3) attitudes and ideals (2013 Revised Curriculum Document, 2013). Teachers applied model of thematic learning well as seen from teacher preparation model in Teaching Preparation Plan. Teacher elected theme contents relevant to Social Studies that conformed to models of discovery learning. Thematic learning was a learning concept developed in 2013. The thematic learning curriculum was the teaching in certain themes that contained a variety of payloads subjects.

Thematic learning was a learning approach that integrated attitudes, abilities, skills and knowledge in the learning process as well as the integration of basic concepts related (Majid, 2015:119). Thematic learning combined multiple payloads in a single theme. Integrated learning approach to teaching and learning involved some fields of study to provide a meaningful experience to students. Meaningful in the sense of an integrated learning provided students to understand concepts of study and attributable to other
concepts that had been mastered previously. In terms of learning objectives, this study showed that learning objectives designed by the teacher revealed satisfactory results providing improvements from the aspect of knowledge, attitudes, and skills.

The purpose-designed of curriculum objectives referred to the revised 2013 Curriculum emphasizing on national education goals. National education served the ability, character development and civilization of the nation's dignity in context of intellectual life of the nation, giving focus on students' potentialsto become a man of faith and fear of God Almighty, noble, healthy, knowledgeable, skilled, creative, independent, citizens of a democratic and responsible (Indonesian Republic Law No 20, 2003). These were in line with the message of the Indonesia Republic 1945 law chapter 31 verse 3 stating that The government provides and conducts a national education system which can enhance faith and nobleness of the people in education the nation life.

It has been obvious that the teacher models were able to implement scientific learning using discovery learning model well. Within the model, the teacher models, who were students of the primary teacher education, developed the thematic learning with character development basis. Students obviously showed the practices of characters in their learning behaviors. In other words, the students of primary teacher education could implement the revised 2013 curriculum, when they were provided with opportunities and guidance. Such success practice has become a solution towards the Primary Teacher Education students in preparing them to be professional teachers employing the 2013 curriculum.

Conclusion
Based on the result and discussion, it can be deduced that model teachers have implemented learning model on scientific discovery learning of Social Studies for primary school. The learning model had been prepared well in the video and teaching materials of Social Studies for Primary Schools. The development of scientific learning model of discovery learning materials by appointing Social Studies for Primary Schools to the Primary School Teacher Education students showed effective and efficient models to develop competencies and skills in teaching skills in support to curriculum reform on Revised 2013 curriculum in Indonesia.

Recommendation
In developing the scientific learning using the discovery learning application model for the social studies materials in primary schools, teachers are suggested to objectively and optimally plan the learning experiences and in practices manage classes to overcome students' noise due to having the discussion and discovery activities.

References
September 14, 2016.


**Kementerian Pendidikan dan Kebudayaan.** 2013. *Model Pembelajaran Penemuan (Discovery Learning)*. Jakarta Kemeneterian Pendidikan dan Kebudayaan RI.


**Ma'jid, Abdul.** 2014. *Strategi Pembelajaran*. Bandung: Remaja Rosdakarya


**Sapriya.** 2014. *Pendidikan IPS*. Bandung: Remaja Rosdakarya


Application of scientific learning for primary school....


