

# Development of Scientific Learning Model Based on Multiliteracies in 2013 Basic School Curriculum

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**Abstract:** This study aims to develop a multiliteracies based scientific learning model by designing learning and testing syntax draft model. Research used development methods by Borg and Gall but was modified because of time constraints includes major steps: (1) do a needs analysis; (2) develop initial products; and (3) expert validation and revision. The results showed that: (1) the developed model was declared valid by the validator; and (2) the development of multiliteracies based scientific learning models can improve student activity.

**Keywords:** scientific learning model, multiliteracies, activity

## I. INTRODUCTION

The 2013 curriculum has characteristics or characteristics that differ from the previous curriculum. Distinguishing characteristics include learning approaches, graduate competencies, and assessment. The learning approach in the 2013 Curriculum is an integrative scientific and thematic approach. The objectives of the 2013 Curriculum according to Fadlilah [1] are: (1) improve the quality of education by balancing hard skills and soft skills through attitudes, skills and knowledge abilities in order to face the growing global challenges; and (2) form and improve productive, creative and innovative human resources as the development capital of the Indonesian nation and state.

According to Majid [2], learning with a scientific approach based learning process of science. Learning activities scientific and inquiry, in other words, the approach to scientific learning is the learning process designed so that students actively construct concepts, laws, or principles through stages of observing, formulating problems, proposing or formulating hypotheses, collecting data with various techniques, analyzing data, drawing conclusions, and communicating concepts, laws or principles that are "discovered".

Learning objectives with a scientific approach are based on the advantages of these approaches, including: (1) improving intellectual abilities, especially high-level thinking skills; (2) forming students' abilities in solving problems systematically; (3) creating learning conditions where students feel that learning is a necessity; (4) learning outcomes are high; (5) training students in communicating ideas, especially in writing scientific articles; and (6) developing students' character [3].

As technology develops, learning is also adapted to the character of students. P Education is currently receiving a lot of demands, one of which is education must be able to produce the human resources (HR) has a full competency that focuses on

thinking skills and communication [4]. One of the problems that are currently of concern is that students' literacy skills in Indonesia are so alarming. The latest results from the PISA study in 2012 based on the OECD [5] it showed Indonesia's slump from 60th in 2009 to 64th out of 65 participating countries.

## II. METHODS

The research method used in this research is the method of research and development. The research and development model used is the Borg and Gall model. The instrument used was a questionnaire. The data analysis used is descriptive.

## III. RESULT

Based on the results of observations that have been carried out in the 2013 curriculum implementation is less than optimal so that it needs a better learning model so that it is expected to improve students' literacy skills. The first stage conducts a needs analysis by observing planning and implementing learning. The second step is designing the learning model. The third stage validates the product design by experts and makes revisions according to expert advice. The product produced in this study is a multiliteracies-based scientific learning model draft according to the 2013 curriculum.

### A. Learning Planning

Based on the results obtained, RPP is used by grade V elementary teachers in Blitar City in its preparation based on the syllabus. Components in the RPP already show a clear identity, competencies, indicators, learning objectives and complete methods for carrying out learning activities. The lesson plans used by teachers are mostly compiled in KKG activities. This is indicated by the results of the interview with one of the class V teachers of SDI Kardina Massa as follows:

Researchers : Do teachers compile their own lesson plans used in learning?

Teacher : No, RPP was arranged in KKG activities in Sukorejo District and Blitar City

Based on the results of the interview, the RPP used in learning was made in the KKG forum and can be adjusted to the conditions in each school. The media contained in the RPP are not detailed in the RPP, including learning material not specified and not using the environment as a learning resource. Preliminary activities have included activities that make students active in learning, among others, activities to provide questions, motivate, explain learning objectives. The core activities contained in the lesson plan have shown scientific learning activities based on the 2013 curriculum.

This is indicated by student activities, among others, students are actively invited to ask questions, students observe, collect information, associated data and information and communicate in a group and individual activities. But there are also elementary schools that have not shown activities according to scientific learning only to communicate knowledge and skills without observing, collecting information and associating data.

Whereas in the closing act in the RPP it has shown students' activities together with the teacher to conclude the material, reflect activities and follow up. The assessment in the RPP is complete consisting of instruments and rubrics assessing attitudes, knowledge, and skills. But there are also RPPs that do not contain instruments and assessment rubrics for attitudes and skills.

The implementation of learning carried out by the teacher based on the RPP that has been made. In the implementation of learning activities consist of preliminary activities, core activities, and closing activities. Preliminary activities of each teacher have conducted apperception activities, motivating students, and convey learning objectives. The teacher gives questions that link the knowledge that students already have with the material to be studied.

The core activities are in accordance with the scientific approach based on the 2013 curriculum where there are activities that must be carried out by students and teachers, namely 5 M (observing, asking questions, gathering information, reasoning / associating and presenting information). Based on the results of observations, these activities have been carried out by the teacher.

Activity 5 M is carried out by most teachers but there are also those who only observe, collect data and communicate but there is no activity to associate data. The closing activity which includes concluding with students, evaluating, giving follow-up has also been done by the teacher. While the evaluation is only limited to the aspect of knowledge.

#### **B. Initial Design of Multiliteracies-Based Scientific Learning Models**

The initial design of the multiliteracies-based scientific learning model is a learning model consisting of scientific aspects which includes 5M activities with the collaboration of multiliteracies

characteristics which include multimedia, multicultural and multi-context. The results of the learning model validation from expert learning experts. Prof. Sa'dun Akbar stated that the multiliteracies-based scientific learning model has been very good only requires minor revisions at the stage of reasoning, trying and communicating. The component aspect of the multiliteracies-based scientific learning model consists of scientific components and multiliteracies aspects.

Based on the scientific aspect questionnaire obtained 83.3% while in terms of multiliteracies aspects obtained 96.3% so that it shows that multiliteracies-based scientific learning models are suitable for use. In the scientific aspect, the activities of reasoning input from validators need to be clarified, the reasoning substance which includes thinking of a causal relationship. In communicating aspects, the input from the validator activities communicates less diverse so that other variations in activities are needed to communicate.

Whereas the multicultural aspects of input from the validator in various ways of communicating need to be multiplied, among others, exhibiting, displaying, and others. Based on input from expert validators, the initial draft revision of the scientific learning model was based on militarization as in the following Table 1. Based on n table on the draft scientific-based learning model consists of 9 syntaxes multiliterate among others presenting the phenomenon, ask, makes answer hile, designing activities, the activity I execute and record the results of activities.

In learning, this model involves 3 components, namely multi-context, multicultural, and multimedia so that the learning model is expected to improve students' literacy skills. In accordance with the results of Abidin's research [8] that the MID-based literacy learning model is proven contributed significantly to the increase in student literacy skills.

#### **IV. DISCUSSION**

The low literacy score of Indonesian students raises many questions related to the causes. One of the causes of the low literacy skills of students in the curriculum and education system and the selection of learning methods and models. To improve the quality of the learning process needs to be done as early as possible so that the literacy skills of elementary students can increase. One way to overcome these problems is by formulating literacy learning models that are in line with the demands of the 2013 curriculum.

The development of this model must be carried out immediately because the various learning models that exist today are oriented towards one particular literacy ability, not oriented towards mastering multiliteracies skills. In multiliteracies learning, students do not only get one competency but a variety of attitude and character competencies.

The competencies include high understanding competencies, critical thinking competencies, collaboration and communication competencies, and creative thinking competencies. This learning aims to

form students who are prepared from various aspects of living life both in school, work and society. Baguley, Pullen, and Short [6] view multiliteracies as a way to understand more broadly the literacy curriculum learned in formal schools that encourages students to be able to participate productively in the community.

Conceptually multiliteracy is an approach that can be used to understand various types of texts and various forms of media produced by various new

technologies through the concept of pedagogy that gives teachers to present information to students using various forms of text and media. According to Morocco, et al. [7], the multiliteracies skills that must be mastered in order to be able to support and develop these competencies include high comprehension reading skills, good writing skills to build and express meaning, accountable speaking skills, and skills in mastering various digital media.

**Table I**  
**Early Draft Table of Multiliteracies Learning Models**

No	Model Syntax	Scientific Component	Multiliteracies		
			Multimedia	Multicultural	Multi-context
1	Present Phenomenon	Observe (see, hear, feel, smell, feel).	Real thing; video shows, certain phenomena shown by the teacher, and others.	Listening, Reading, Ethics, and others	Language, Science, Social Sciences, Mathematics, etc.
2	Ask/ask questions related to the phenomenon	Ask	Various stationery, notebook and oral.	Stimulation of the growth of polite attitude in asking questions, etc.); Write questions to be asked (stimulation of students' abilities in writing); Talk (stimulation of students' ability to communicate orally)	Various materials (Language, Science, Social Sciences, Mathematics, etc)
3	Interim Answer	Communication	Various stationery, notebook and oral	Write and speak (stimulation of language skills)	Stimulation of thinking skills
4	Activity Plan	Creative thinking	Can use the internet, videos, maps, books, original objects, and others.	Cultivate experimental activities, reading, writing, interviewing, and others.	Multicontext (Language, IPS, Science, etc).
5	Carry out activities	Observe Ask Experiment	Develop the ability to use various media. Stimulation of critical thinking, creative, language, and curiosity.	Get used to doing experimental activities, reading, writing, interviewing, and others. And develop collaborative and cooperative attitudes.	The chance to enrich insight into various fields of science.
6	Record activity results (called data)	Gather information	Stimulation to use various media, both traditional and digital media.	To develop conscientiousness, cooperation, and others.	Stimulation of critical thinking, creative, language and curiosity, and enriching insight.
7	Reasoning results of activities or data	Reasoning	Utilizing various media to find related knowledge	Cultivate Listening, Collaborate	Stimulation for critical thinking, creative, innovative, and others.
8	Conclude	Conclude	Various stationery, notebook and oral	Cultivate systematic thinking, critical	Stimulation for critical thinking, creative, innovative, and others.
9	Share	Communicate	Train the use of various media to share knowledge.	Cultivate an attitude of sharing, both orally and in writing.	Enriching insight, vocabulary and communication skills.

Multiliteracies learning is learning that is developed based on scientific work. Therefore, one component in multiliteracies learning is the learning cycle or the cycle of the meaning formation. This cycle is a guide for learning literacy in the classroom. The stages of the literacy learning cycle proposed by Morocco [7] are as follows:

1. Involving, learning involves students by exploring the initial knowledge they have.
2. Respond, activities to respond to all learning challenges given by the teacher. Students actively conduct various investigations, observations or simple research activities to answer the questions given in the first stage
3. Elaboration, students elaborate on various individual and group findings and write in the form of reports.

4. Reviewing, interim reports are reviewed and prepare to deliver results in class discussions.
5. Presenting, representatives of the group presented the work, followed by the review, strengthening, and development of the material by the teacher.

Researches related to the development of multiliteracies education models have been carried out by several previous researchers, including Yunus Abidin, Kurniawati, Tita Mulyati, and Hana Yunansah [8]. This study also shows that the design of the multiliteracies education model that was successfully developed has been proven to be effective in improving the multiliteracies ability to read students. The importance of developing literacy-based scientific learning models is based on the idea of aligning

Indonesia's literacy skills with neighboring countries early on.

## V. CONCLUSION

The study model development research uses the Borg & Gall development model with modifications only to the validation of material experts along with the revision of the learning model draft. Based on the research that has been done it can be concluded: (1) the developed model is declared valid by the validator; and (2) the development of multi-literacies based scientific learning models can increase student activities with multi-context, multicultural and multimedia. Further research is needed to try the model on students and to find out the students' response to learning by using the model.

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