THE APPLICATION OF THE SAINTIFIC APPROACH TO INTEGRATED THEMATIC LEARNING AT PRIMARY SCHOOLS ON CLASS IV IN SINGKAWANG CITY

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Abstract

The purposes of this study were (1) The comprehension of the fourth grade teachers about the scientific approach and integrated thematic learning; (2) the integrated thematic lesson plan with a scientific approach; (3) the implemented steps of the scientific approach to the core activities of the learning process; (4) the activities of learners in the integrated thematic learning with a scientific approach; (5) the attitudes of students in the integrated thematic learning with a scientific approach; and (6) the factors supporting and inhibiting to the application of scientific approach in the integrated thematic learning.

The approach used was a qualitative descriptive approach. The instrument of collecting data consisted of nonparticipant observation, interview and documentation study. The data Triangulation was done in two ways which were triangulation sources and triangulation methods.

The results showed that the designed lesson plan was an integrated thematic scientific approach. The learning process was done according to the core activities with the scientific approach activity steps. The activities of students have also been according to the steps in the scientific approach. It is needed the supporting factors such as facilities and infrastructure to succeed the learning. However, there is also the obstructed factors.

Keywords: Integrated Thematic Education, Scientific Approach, Curriculum 2013 Implementation Model in Elementary School

Introduction

According to the spirit and mandate of the initial product 2013 curriculum, of the many learning models, integrated thematic learning is a curriculum implementation model that is recommended to be applied. Through integrated thematic learning models students can get direct experience so that they can add strength to receive, store and apply the concepts of knowledge they have learned.

Integrated thematic learning, especially in elementary schools, is very helpful for students to construct knowledge in their cognitive processes. It is very relevant to the development stage, where elementary school students see themselves as the center of the environment which is a whole with unclear elements. They also still see everything as a holistic by departing from concrete things.

Singkawang Tengah 1 State Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School, especially grade IV for five semesters in 2015/2016 Academic Year have applied integrated thematic learning processes with scientific approaches. Both elementary schools have been appointed by the Education Office of Singkawang City to become a pilot school for Implementation of 2013 Curriculum. These conditions and conditions become problems in research, namely: How is the application of
scientific approaches to integrated thematic learning in class IV of Singkawang Tengah 1 Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School?

Thematic learning is integrated learning that uses themes to link several subjects so that they can provide meaningful experiences to students (Abdul Majid, 2014: 80). Trianto (2012: 84) also concludes that integrated thematic learning is a learning model that combines several learning materials from various competency standards and basic competencies from one or several learning subjects. So, in the implementation of the subjects of PPKn, Science, Mathematics, Social Sciences, Indonesian Language and others are no longer separated, but there are integration and unity.

Referring to the Minister of Education and Culture on 2013 Curriculum, it can be seen that integrated thematic learning has special characteristics namely developing meaningfulness and being tied to certain themes in the learning activities of students by departing and paying attention to the level of development, interests, and needs of students through the implementation of interactive learning carried out simultaneously. Thus, thematic learning is an integrated learning model that uses a specific theme as a binding to associate certain concepts, ideas, skills, values and attitudes both in one or several subjects that are carried out spontaneously or planned with various learning experience activities, both inside and or outside the classroom so that it can provide meaningful experiences to students. Meaningfulness occurs because students learn through direct experience and relate it to other concepts they have mastered.

Integrated thematic learning departs on 3 (three) foundations, namely philosophical, psychological and juridical. Psychologically, students can make significant changes in their lives even though they are evolutionists. It is because the living environment of students is a world that continues to process evolutionist as well (Trianto, 2013: 102). Philosophically, the emergence of thematic learning is strongly influenced by the three schools of modern philosophy, namely progressivism, constructivism, and humanism. The juridical basis is in the form of regulations issued by the Ministry of Education and Culture.

The scientific approach is a learning approach that emphasizes the learning activities of students through observing, questioning, reasoning, trying and networking at school learning activities (Rusman, 2015: 232). Students are given wide opportunities to explore and elaborate and actualize their abilities. While Sudarwan (in Kemendikbud, 2014: 15) explained that the 2013 Curriculum explicitly emphasizes the application of the scientific approach in the learning process which includes steps of activities: observing, asking, trying, processing, presenting, concluding, and creating for all subjects. In the scientific process, the scientific approach is a way to study certain aspects of nature in an organized and systematic way through standardized scientific methods.

Based on some of the opinions above, it can be concluded that the scientific approach is a learning approach using scientific approaches and inquiry where students are directed and guided in observing, asking, trying, reasoning and networking or communicating to disseminate learning outcomes. So that it can develop a scientific attitude and foster learning skills (basic learning tools), namely the ability to function to shape individual skills in developing students independently.

The form of integrated thematic learning activities through the scientific approach can be seen in the following table:
Learning Activities Based on Five Steps of Scientific Learning

<table>
<thead>
<tr>
<th>Activity</th>
<th>Learning Activities</th>
<th>Developed Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing</td>
<td>- View, observe, read, hear, listen (without and with tools)</td>
<td>Train sincerity, thoroughness, seek information</td>
</tr>
<tr>
<td>Asking a Question</td>
<td>- Asking questions about information that is not understood from what is observed or questions to get additional information about what is observed (starting from factual questions to hypothetical questions)</td>
<td>Develop creativity, curiosity, ability to formulate questions to form critical thoughts that are necessary for intelligent living and lifelong learning</td>
</tr>
<tr>
<td>Collecting Information/</td>
<td>⊗ - Perform experiments</td>
<td>Develop careful, honest, polite, respect the opinions of others, the ability to communicate, apply the ability to gather information through various ways learned, develop learning habits and lifelong learning</td>
</tr>
<tr>
<td>Doing Experiment</td>
<td>⊗ - Read other sources besides textbooks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>⊗ - observe objects / events / activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>⊗ - interviews with resource persons</td>
<td></td>
</tr>
<tr>
<td>Associating / Processing Information</td>
<td>⊗ - Processing the information that has been collected, both limited from the results of the activity of collecting/experimenting and the results of observing activities and information gathering activities</td>
<td>Develop a thorough attitude, honesty, discipline, obedient rules, hard work, ability to apply procedures and the ability to think inductively and deductively in concluding.</td>
</tr>
<tr>
<td></td>
<td>⊗ - Processing of information collected from the nature of adding breadth and depth to the processing of information that is looking for solutions from various sources that have different opinions to the contrary.</td>
<td></td>
</tr>
<tr>
<td>Communicating</td>
<td>⊗ - Delivering observations, conclusions based on the results of the analysis verbally, in writing, or other media</td>
<td>Develop a thorough, honest, tolerant attitude, the ability to think systematically, express opinions in a concise and clear manner, and develop good and correct language skills.</td>
</tr>
</tbody>
</table>

Research Method
The approach used in this study is a qualitative approach with the type of descriptive research. Djam’an Satori et al. (2010: 22) defines qualitative research as research that emphasizes quality or the most important thing of the nature of an item/service. The most important thing of an item/service in the form of an event/phenomenon/social phenomenon is the meaning behind the event which can be used as a valuable lesson for the development of a theoretical concept. Researchers, in this case, are instruments as well as data collectors. Researchers take part in the field and become part of the field so they can find out what the real situation is (the reality that exists).

Researchers investigated intensively the current background, circumstances, and position as well as the interaction of the core activities of the thematic learning process integrated with the scientific approach in class IV Singkawang Tengah 1 State Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School which are as they are. In general, the activities that researchers do include setting research focus, selecting informants as data sources, collecting, describing, analyzing, and discussing/interpreting and concluding data obtained in the field directly. Researchers also study class IV teacher learning documents, namely learning implementation plans, syllabus and assessment documents in the form of a list of grades. Researchers used three methods of data collection in this study, namely: (1) Direct Observation/Observation; (2) Interview; and (3) Documentation Study.

Triangulation used is data triangulation and method triangulation and extension of observation. In data triangulation techniques, researchers use various data sources that have interests including principals, classroom teachers, and fourth-grade students. In Singkawang Tengah 1 State Elementary School there are 3 (three) classes, and in Singkawang Nurul Islam Integrated Islamic Elementary School, there are 2 (two) classes. Triangulation of methods, in this case, is the use of various methods in evaluating programs that have been implemented. Extension of observation is to extend the time of observation in the field.

Result and Discussion
Findings of Teacher’s Understanding of grade IV of Singkawang Tengah 1 State Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School

The findings obtained by the researchers during their research on the two schools regarding the understanding of grade IV teachers on integrated thematic learning with the scientific approach are described as follows:

Researchers conducted interviews with three teachers in grade IV Singkawang Tengah 1 State Elementary School and two teachers in grade IV of Singkawang Nurul Islam Integrated Islamic Elementary School. The researcher asked the opinion of the class teacher about the concept of integrated thematic learning. As in the interview held on Tuesday, January 26, 2016, to the three teachers of grade IV Singkawang Tengah 1 State Elementary School, Mrs. Leny Gustina, S.Pd.SD, Mrs. Enny Daryanti, S.Pd.SD and Mrs. Winarti, A.Ma.Pd, obtained information about the teacher’s understanding of integrated thematic learning, namely integrated thematic means a learning model that combines several learning content into one theme. The learning system is based on a theme. In one theme, it contains content for learning PPKn, Indonesian Language, Mathematics, Science, Social Sciences, SBdP, and PJOK.

Other information obtained by the researcher in the interview to Mr. Mahmudi, S.Pd, teacher of grade IV Sholeh and Ibu Suharna, S.Pd.I, teacher of grade IV Ibrahim of Singkawang Nurul Islam Integrated Islamic Elementary School also not much different. The two class teachers explained that the integrated thematic in the 2013 Curriculum consisted of several learning contents into one. In the sense that everything is gathered together in the form of themes from several learning contents. The integrated lessons include Mathematics, PPKn, IPS all kinds of SBdP that are theme-oriented. For example Environmental theme. So,
every subject is environmentally oriented, both in Indonesian, PPKn, Mathematics, Social Sciences and everything about the environment. But still based on the determined KD.

Related to the concept of scientific approach as an integrated thematic learning approach, Ms. Leny Gustina, S.Pd.SD, Ms. Enny Daryanti, S.Pd.SD and Mrs. Winarti, A.Ma.Pd was interviewed on Tuesday, January 26, 2016, stating that The scientific approach to integrated thematic learning that they know is covering 5 (five) learning steps or 5 M, which consists of observing, asking questions, gathering information, processing information, and communicating.

From the statement of the fourth-grade teacher in the two schools, it can be concluded that the steps in the activities of the scientific approach in the integrated thematic learning process have been well understood. It's just that Mr. Mahmudi, S.Pd’s understanding is still somewhat "dubious." He honestly admitted that it was only in this school year that it implemented and understood integrated thematic learning by applying a scientific approach.

Findings of the Learning Implementation Plan with The Scientific Approach Made by The Class Teacher

The process of developing an integrated thematic learning plan based on a scientific approach, the classroom teacher has carried out the planning stage. However, in this stage, the teacher does not make syllabus so that the drafted RPP is guided by the syllabus that is already owned by the school. The integrated thematic Learning Implementation Plan (RPP) created by the teacher contains a minimum standard of RPP 2013 Curriculum that has been determined by the Ministry of Education and Culture including: Core Competencies, Basic Competencies, Indicators, Learning Objectives, Companion Impacts, Concept Concept Networks, Main Material , Learning Tools and Media, Learning Methods, Learning Activities including Time Allocation, Learning Evaluation and Learning Assessment.

Core Competence (KI) consists of 4 components of core competencies which become the foundation and reference in developing the minimum ability qualifications of students. These four core competencies describe the ability of religious attitudes, mastery of social attitudes, knowledge, and skills that are expected to be achieved by students each semester.

Basic Competence is some abilities that must be possessed by students in certain subjects as a reference in preparing indicators of the achievement of the teaching and learning process. Basic competencies established by the Ministry of Education and Culture apply nationally and can be used as a measuring point for uniformity in achieving educational competencies at each level. This Basic Competency that has been determined will be the starting point in the preparation of indicators.

Indicators are markers of achievement of Basic Competencies which are characterized by measurable behavioral changes that include attitudes, knowledge, and skills. Indicators are developed in accordance with the characteristics of students, subjects, education units, regional potential and formulated in the operational verb (KKO) that are measured and can be observed. The teacher uses indicators as guidelines in developing learning materials, designing learning activities, developing teaching materials and in designing evaluation and assessment of learning outcomes.

In the formulation of thematic learning objectives with a scientific approach as the RPP document that researchers analyze, it is known that the class teacher formulates it by considering the ideal criteria of a learning goal, namely: the existence of Audience, Behavior, Condition, and Degree or more commonly known as the ABCD formula. Learning objectives are made to accommodate students’ abilities, using operational verbs such as: mentioning, explaining, showing, concluding, making reports and so on. So that it can be measured, considering the circumstances that support and influence the success of students in achieving the ultimate goal of learning is done correctly and appropriately.
Learning activities designed by the teacher consist of three main components, namely the initial activities, the core activities, and the final learning activities. The initial learning activities planned by the teacher in the form of an opening greeting, attendance, submission of apperception in the form of questions related to the theme of learning on that day, learning objectives and activities to be carried out during the learning process.

The class teacher continues the draft RPP by drawing up a plan of core learning activities. The core activities are in the form of learning scenarios and the stages of the learning process that will be carried out during the learning process. The learning scenario created by the teacher emphasizes the activities of the scientific approach which consists of: observing, asking, searching for information / conducting experiments, reasoning / associating, and communicating. Learning scenarios are also arranged using sentences that are easy to implement, orderly, and systematic and prioritize the process of activeness of students, not the other way around, more active teachers.

After compiling the core activities, the class teacher continues the preparation of the final learning activity scenario. This activity includes providing opportunities for students to ask or express opinions about learning that has been done, together with students make conclusions, ask students to make a summary, provide an evaluation of results. Continued to do feedback from things that have been or have not been understood by students and closed learning activities.

An integrated thematic RPP evaluation with a scientific approach that has been made by classroom teachers can be grouped into process evaluation and outcome evaluation. Process evaluation activities occur during the learning process and are more likely to measure the ability of affective aspects (religious and social attitudes) and skills (psychomotor) of students. While the evaluation of learning outcomes is more to measure the ability to master knowledge of students. In the context of this scientific approach, it is not enough to rely solely on conventional assessments. An alternative assessment that is more authentic and significant can be needed to reveal the learning process and results of students directly.

Findings of the Steps for Application of the Scientific Approach to the Core Activities of the Integrated Thematic Learning Process Conducted by Class Teachers

Based on data from observations and interviews obtained information that integrated thematic learning has been implemented in Singkawang Tengah 1 State Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School. Likewise, with the learning process approach, it has applied a scientific approach that includes five steps of learning activities, namely: observing, asking questions, gathering information/experimenting, reasoning / associating, and communicating. This application is adapted to the basic competencies of each subject content in a variety of subjects in a single lesson. The steps of scientific activity in one sub-theme with six learning will be presented as follows:

**Observe**

Observing is a scientific activity that is very easy to implement, namely by using the five senses which include vision, hearing, tasting, touching, and blending. Through the sensing process, students capture phenomena and or information about objects, people, nature, activities, and ideas. From the activity observation data observe in one sub-theme detailed in the table as follows:

<table>
<thead>
<tr>
<th>Time</th>
<th>Observing Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning 1</td>
<td>Students observe five photos of Indonesia’s natural beauty</td>
</tr>
<tr>
<td>Learning 2</td>
<td>Students observe non-living natural resources in their</td>
</tr>
</tbody>
</table>
area, write down their benefits, and the types of work that arise with the existence of these natural resources.

Learning 3  Students observe photos of the Borneo forest and read texts about the beauty of the forests of Borneo and the benefits of the forest for life.

Learning 4  Students calculate the amount of rice production produced by other districts in Bali based on information from reading.

Learning 5  Students read the satellite map of East Java province, to find out the closest route to the location of the BTS National Park (Bromo Tengger Semeru National Park).

**Asking a Question**

The question is a scientific activity after observing the activity with the intention that the students play an active role during the learning process. Students become aroused asking questions that they have not understood or are still doubtful. This questioning activity begins with the guidance of the class teacher until finally, the students can ask questions independently and become a habit. From the observation data the questioning activity is in one sub-theme detailed in the table as follows:

<table>
<thead>
<tr>
<th>Time</th>
<th>Questioning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning 1</td>
<td>Students exchange a list of questions that have been made with a friend, ask them to read each other’s questions and correct them if the questions are difficult to understand.</td>
</tr>
<tr>
<td>Learning 2</td>
<td>Students re-read the questions they have made in activity one</td>
</tr>
<tr>
<td>Learning 3</td>
<td>Students ask questions about the natural beauty of the Raja Ampat Islands</td>
</tr>
<tr>
<td>Learning 4</td>
<td>Students ask what they want to know, and what they want to do with the forest</td>
</tr>
<tr>
<td>Learning 5</td>
<td>Students ask questions about rice production and subak technology</td>
</tr>
</tbody>
</table>

**Collect Information / Try / Experiment**

Collecting information/ trying/experimenting is a scientific activity carried out to obtain tangible, direct and meaningful learning outcomes. This activity is carried out to explore and collect some information from various sources in various ways even to conduct experiments/experiments. The activities are not only limited to classrooms but also even outside the classroom such as in the library, schoolyard, computer room and so on.

<table>
<thead>
<tr>
<th>Time</th>
<th>Experiment Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning 1</td>
<td>-</td>
</tr>
<tr>
<td>Learning 2</td>
<td>-</td>
</tr>
<tr>
<td>Learning 3</td>
<td>Students do two types of experiments to determine the</td>
</tr>
</tbody>
</table>
function of trees/plants for life on earth.

Learning 4
Students look for additional information to get at least ten examples of environmental care behavior and ten examples of behaviors that damage the beauty of the environment.

Learning 5
Students with a friend, look for one traditional or modern technology used in the student's living area

Reasoning / Associating

Reasoning / Associating is a scientific activity that conditions students to work together so that they can help each other to do assignments. This activity emphasizes the learning activities of students to make the process of understanding, get meaning/understanding of facts, symptoms, activities, ideas, values, and others. From the observations of associating activities in one sub-theme detailed in the table as follows:

Table V
Reasoning / Associating Activities

<table>
<thead>
<tr>
<th>Time</th>
<th>Reasoning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning 1</td>
<td>Students choose one location in their area of residence that is famous for its natural beauty and is visited by many local residents or residents from other areas and then draw illustrations or attach photos of tourist attractions under their writing</td>
</tr>
<tr>
<td>Learning 2</td>
<td>Students practice solving problems about the nominal amount of natural wealth found in the Raja Ampat Islands</td>
</tr>
<tr>
<td>Learning 3</td>
<td>Students write down the reasons why the images they circle are included in environmental safeguards</td>
</tr>
<tr>
<td>Learning 4</td>
<td>Students look at the reading about Subak technology, then analyze the contents of the reading and look for a causal relationship which then occurs in the lives of people in Bali with the existence of Subak. Students write in the available causal chart then briefly explain the technology, through writing</td>
</tr>
<tr>
<td>Learning 5</td>
<td>-</td>
</tr>
</tbody>
</table>

Communicate

At the end of the core learning activities, students are expected to be able to communicate their work, both individually and in groups. In this activity, the teacher can clarify and correct the work of students, so that students can find out the right work.

Table VI
Communicating Activities

<table>
<thead>
<tr>
<th>Time</th>
<th>Communicating Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning 1</td>
<td>Students in pairs tell each other about the tourist attractions they have written.</td>
</tr>
<tr>
<td>Learning 2</td>
<td>Students discuss with a friend to compare two types of sentences: Ordinary sentence (A) and description sentence (B).</td>
</tr>
</tbody>
</table>
Learning 3
With a friend, students communicate alternately, the results of data searches and conclusions about the two types of behavior. Students mention the examples and briefly explain the reasons.

Learning 4
Students briefly explain the technology, through writing.

Learning 5
Each group presents their travel plans in front of other groups, and compare them to find out which groups have the most detailed and complete travel plans

From the data obtained above, it shows that the scientific approach which includes 5 M has been implemented in an integrated thematic learning process. Learning activities include and start from observing, asking, gathering information/experimenting, reasoning / associating and communicating. In every single learning, scientific activities are carried out in accordance with existing basic competencies, so that sometimes all scientific activities can be carried out in one learning. But it can also happen, in one study only a few scientific activities can be carried out.

Findings of Learning Activities for Students in Integrated Thematic Learning Process by Applying Scientific Approaches in Classes

Based on the results of observations on the implementation of integrated thematic learning with a scientific approach in class IV Singkawang Tengah 1 State Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School, there were a number of learning activities of students who showed active activities. Students do learning activities in groups, both discussion groups, and work groups. Students are indeed designed and divided into several study groups by class teachers. These study groups are named according to the message and material contained in the theme. It is a good thing to bring and bring students into the learning environment.

Singkawang Tengah 1 Elementary School in the theme of Beautiful Country in class IVa, the names of emerging groups such as Lake Toba, Kalimantan Forest, Mount Bromo, Raja Ampat Islands, and Mount Rinjani. Furthermore, in class IVb, the names of the study groups include Javanese Peacock, Cenderawsih, Orang Utan, Komodo, One-Spotted Rhinoceros, Sumatran Tiger, and Anoa. Then in IVc class, the study group was named with Anggrek Bulan, Mawar, Melati, Aster, Kembang Sepatu, Nusa Indah, and Matahari. Whereas Singkawang Nurul Islam Integrated Islamic Elementary School in the fourth grade of Ibrahim on the theme of My Dream, the name of the study group include: Architects, Teachers, Soldiers, Doctors, and Astronauts. Then in class IV Sholeh the group name consists of Wine, Pineapple, Orange, Guava, Starfruit, and Mango.

The learning activities of students that appear in the cognitive realm such as solving problems about nominal amounts, doing calculations, asking questions and explaining the concepts found. Furthermore, the learning activities of students that appear in the affective domain are: (a) creating enthusiasm for learning, enthusiasm and active in the learning process, (b) creating independence, bravery and being able to cooperate with others without discriminating between ethnic groups, religions and groups, (c) creates a sense of responsibility for all tasks given, (d) honest in completing tasks, (e) creates a sense of pride in being an Indonesian child, as evidenced by students being able to make poems and read them in front of the class, (f) create an attitude of faith and piety in God Almighty is in accordance with each other's faith.

Then the learning behavior of students in the psychomotor domain is shown in the activities of conducting experiments, making crafts, sticking pictures or taking pictures. In this psychomotor domain, students become very active, full of enthusiasm and enthusiasm, and very happy to do activities. By trying, doing, and experiencing directly, it is expected that
the learning process and results will be long attached to the students' thoughts and feelings and will become more meaningful.

Findings of Students' Attitudes Towards Integrated Thematic Learning Process by Applying Scientific Approaches in Classes

Grade IV teachers through field notes and assessment rubrics on the development of the attitudes of students. It is in line with the explanation of the fourth-grade teacher in both schools that for the assessment of children's attitudes, it will be unrepresentative and unsuitable if done by giving some test questions. For logical reasons that a good, ideal and more representative answer will be expected if it is related to a problem or case. Therefore, more class teachers use attitude assessment rubrics to provide an assessment of the attitudes of students throughout the learning process.

Based on observations made, both in Singkawang Tengah 1 Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School, there was high enthusiasm and enthusiasm of students in conducting learning activities during the learning process. Starting from the seriousness in making observations of a learning medium and textbooks and other learning resources, the courage to ask questions both for the class teacher and for fellow students. Furthermore, they are very enthusiastic about finding information and conducting experiments, associating and reasoning and communicating what they have gained and generating. Then based on the results of interviews with some fourth-grade students in the two schools, they also said they were very happy with the learning activities that took place.

Findings of Supporting and Inhibiting Factors for Application of Scientific Approach to Integrated Thematic Learning Processes in Classes

Based on the results of interviews and observations of school principals and fourth-grade teachers of Singkawang Tengah 1 Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School, that in the implementation of integrated thematic learning based on the scientific approach it is very necessary to be supported by school facilities and infrastructure. Textbooks, teacher handbooks, and other learning resources must be available. Likewise with learning media, both intentionally made or in the form of original and direct objects/objects. The principal also provides support in the form of motivation and access to teachers and students to use school facilities, such as libraries, computer rooms, language rooms, laboratories, and learning media and school environments.

In addition to physical support, the teacher's skill factor in designing learning is also support for the implementation of integrated thematic learning strategies based on this scientific approach. Teachers in both schools were included in learning workshops with a scientific approach including empowering the Teacher Working Group (KKG). Included here sending some teachers, although still limited in number, attended the education and training carried out by the Education Quality Assurance Institute (LPMP) of West Kalimantan province. It is certainly based on the amount of quota given by LPMP.

Besides the support factor, the implementation of thematic learning strategies based on scientific approaches in grade IV of State Elementary School 1 Singkawang Tengah and Singkawang Nurul Islam Integrated Islamic Elementary School also encountered several obstacles. These obstacles are still in a normal and normal way. Especially for things that are still considered new about the implementation of integrated thematic learning and scientific approaches. The constraints in the implementation of integrated thematic learning with the scientific approach to both schools mainly come from students, the time and role of parents of students.

Students have different characteristics and abilities of individuals who are not the same. Smart and intelligent students will be very fast in following and conducting learning activities. Conversely, for students who are less and sluggish, they will experience difficulties
in learning activities. Whereas in the class more students have an average ability to go down. This situation makes it an obstacle in implementing integrated thematic learning with a scientific approach. Moreover, it is demanded that students who are more active find themselves in finding out.

In overcoming this time constraint, the class teacher works around this by giving homework so that the unfinished material will be obtained by the students at home. Even more than that, in this 2013 Curriculum there are a number of learning activities that students must do with parents at home. Therefore, it should be emphasized that in doing this homework assignment, students must always get help and guidance from parents. It creates another obstacle because there are parents of students in the fourth grade of State Elementary School 1 in Singkawang Tengah who do not support the education of their children. This lack of support is due to the average level of education of parents who are still low and the high intensity of work for parents.

Efforts are being made to overcome this obstacle, the school in this case the class teacher has called the parents of students who obtain low learning outcomes. Sometimes class teachers also come to the homes of students (home visits) to discuss building intensive communication with parents of students about their children's learning abilities. Need to be informed here, in general in these schools there are still many parents of students who pay more attention and help learn their children at home.

A somewhat different situation occurs in Singkawang Nurul Islam Integrated Islamic Elementary School where the participation of parents is much better in providing support and cooperation. Favorite school factors encourage parents to send their children to school. So, not just any parents who leave their children to study at this school, both regarding economic and educational level of parents. Especially with the addition of integrated Islamic religious subjects which are also prioritized in the school curriculum. The fourth-grade students in this school have an average academic ability that is better, so it is somewhat better in the learning process and achievement of learning outcomes.

**Conclusions and Suggestions**

**Conclusions**

Specifically, the conclusions of this study are: (1) grade 4 teachers at Singkawang Tengah 1 State Elementary School and Singkawang Nurul Islam Integrated Islamic Elementary School have understood well the concepts and models of integrated thematic learning with scientific approaches, (2) Learning Implementation Plans made by fourth grade teachers in both schools have also fulfilled the minimum requirements in developing an integrated thematic RPP with a scientific approach, especially the core learning activities according to the Minister of Education and Culture. (3) Integrated thematic learning has been carried out with scientific approach learning steps covering 5 M. (4) Students appear to be very active, enthusiastic, enthusiastic, and happy in integrated thematic learning activities carried out by the steps of the scientific approach. (5) Integrated thematic learning with a scientific approach can shape scientific attitudes, spiritual attitudes, courage, confidence, responsibility and a sense of togetherness of students in learning activities. (6) Factors that support the sustainability of integrated thematic learning with the Scientific approach to both schools include the availability of school facilities, school facilities, and infrastructures, such as libraries, learning media, internet access services, and student books and teacher books.

Based on the findings, discussion and conclusions described in this study, the researchers provide recommendations to principals, teachers, education experts and practitioners as well as parents of students including: (1) Principals should always carry out monitoring and guidance to relevant class teachers with the implementation of integrated thematic learning with a scientific approach through various ways such as: supervision of
learning, regular meetings, and giving reinforcement and rewards; (2) The class teacher is expected to be able to carry out thematic learning integrated with the scientific approach to the maximum in accordance with the mandate of the Minister of Education and Culture. The classroom teacher needs to analyze the relationship between concepts with one another in several subjects in the concept network in the teacher’s book. The class teacher needs to bring up a certain part of the learning step of the scientific approach that has not yet appeared in learning activities. Similarly, in designing and making RPP, it should meet minimum standards, be guided and refer to Permendikbud. (3) Scientists or other researchers who will research the same problem, hopefully, this research can be used as a reference and more specific research considerations. (4) Parents/guardians of students, that thematic learning integrated with this scientific approach, is not only the duty and obligation of the class teacher but must be a synergistic partnership between family and school education. Especially in the development of learning activities in the scientific approach in the family environment. Therefore, parents/guardians of students can establish intense communication, contribute and cooperate with the school.

Suggestions

Based on the findings, discussion and conclusions described in this study, the researchers provide recommendations to principals, teachers, education experts and practitioners as well as parents of students including: (1) Principals should always carry out monitoring and guidance to relevant class teachers with the implementation of integrated thematic learning with a scientific approach through various ways such as: supervision of learning, regular meetings, and giving reinforcement and rewards; (2) The class teacher is expected to be able to carry out thematic learning integrated with the scientific approach to the maximum in accordance with the mandate of the Minister of Education and Culture. The classroom teacher needs to analyze the relationship between concepts with one another in several subjects in the concept network in the teacher’s book. The class teacher needs to bring up a certain part of the learning step of the scientific approach that has not yet appeared in learning activities. Similarly, in designing and making RPP, it should meet minimum standards, be guided and refer to Permendikbud. (3) Scientists or other researchers who will research the same problem, hopefully, this research can be used as a reference and more specific research considerations. (4) Parents/guardians of students, that thematic learning integrated with this scientific approach, is not only the duty and obligation of the class teacher but must be a synergistic partnership between family and school education. Especially in the development of learning activities in the scientific approach in the family environment. Therefore, parents/guardians of students can establish intense communication, contribute and cooperate with the school.

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