

Students' Progress Through Thematic Learning Integrated with Scientific Approaches

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This study described the improvement of integrated thematic learning with a scientific approach in the Bukittinggi City Primary School. The approach used in this study is a qualitative and quantitative approach to classroom action. The results of the research, in planning the first cycle learning, was at a rate of 83.4 per cent, and increased in the second cycle to 93.1 per cent. The results of the implementation of the teacher actions in the first cycle was at a rate of 72 per cent, and increased in the second cycle to 90.6 per cent. The results of the implementation of the activities of students in the first cycle was at a rate of 72 per cent, and increased in the second cycle to 96 per cent.

Key words: *Teaching and learning process, Integrated thematic, Scientific approach.*

Background

Integrated thematic learning is learning that uses themes as the main focus. Holistically, this learning provides meaningful experiences for students. It is found to be meaningful because in integrated thematic learning, students will understand the concepts they study through direct and real experience and relate them to other concepts that are already understood. According to Fitria et al. (2018), integrated learning is learning that links one lesson to another. Furthermore, Fitria et al. (2017) suggested that "Thematic learning is conditioned so that students get optimal, good, impressive, enjoyable and enjoyable learning experiences because they depart from the interests and needs of students, and foster social policies in helping others". Therefore, in the 2013 Curriculum, learning in thematically sponsored scientific thematic learning was used. This means that with thematic learning, students receive an optimal learning experience, which is good, impressive, and fun because learning is through the interests and needs of students and fosters a social policy in helping others.

Therefore, the 2013 Curriculum uses thematic learning in education. A different opinion was also expressed by Purwadarminta (Majid, 2014), that integrated thematic learning is learning that uses themes to link several subjects to provide meaningful experiences to students. The theme is the main thoughts or ideas that are the subject of the conversation. It is a learning approach that integrates various competencies from numerous subjects and into a theme. Therefore, in presenting learning material, the teacher must be able to present the material from various subjects intact, and not separately, in a predetermined theme (Lian et al., 2018; Khasanah et al., 2019; Sarina et al., 2019). The integrated thematic advantage in education is that it can provide meaningful learning for students and create a pleasant learning atmosphere. For example, in the material contained in the theme of caring for animals and plants. In this material, students are required to develop their thinking in understanding the lesson and be skilled at finding and solving existing problems.

There is many ways that teachers can deliver integrated thematic learning, including by using a scientific approach. Wherein, students obtain information from anywhere, at any time, and do not depend on information provided by the teacher (Majid, 2014). This is an attempt to provide understanding to students in knowing and understanding various materials by using a scientific approach, where information can come from anywhere, at any time, and does not depend upon unidirectional information from the teacher. Therefore, the expected learning conditions created are directed to encourage students to discover and learn from various sources of observation, and not by being told (Wandasari et al., 2019). This scientific approach is different from the learning approach used in the previous curriculum, where in the scientific approach, there are steps in the learning process. The scientific steps in the integrated thematic learning process include observing, asking, reasoning, trying, and communicating. This is in line with the Ministry of Education and Culture (2013), which states that a scientific approach in learning includes the components of observing, asking, reasoning, trying and creating, and presenting and communicating. The application of a scientific approach is expected to create learning conditions that encourage students to discover and learn from various sources, and not by being informed by the teacher. Therefore, the expected learning conditions created are directed to encourage students to discover and learn from various sources of observation, as opposed to being told information. Fitriani (2014) also explained that teachers are the key element in efforts to achieve a quality improvement in education through the student-based learning model with a scientific approach. This means that the teacher provides freedom to students to explore their knowledge through the activities of observing, winning, trying, reasoning, and then communicating the knowledge they have acquired.

The reality that often occurs is that the learning process by the teacher shows the following: it tends to be a one-way style; there is a lack of opportunities for students to find their own understanding; they have not been able to present learning as a whole, with clearly visible

separation between the eyes lesson; there is a lack of giving or confronting students in a problem; the teacher is lacking in conditioning the classroom; and the teacher is not optimal in using the learning approach in the classroom, and there are still several scientific steps that have not been maximally implemented. This may include that the teacher has not given feedback to students in the learning process (asking); the teacher is lacking in linking the existing knowledge with life that is relevant and real for students (trying); and the teacher has not allowed students to communicate or tell what they have learned to the front of the class (communicating). The main problem in learning in a formal education is the low absorption of learners or students (Fitria, 2013). Besides that, the facts also show that the teacher does not guide all students in the exercise; the teacher only gives guidance to some students, and the teacher does not guide students to do the task independently because there are still students who ask their friends. If the learning conditions described above are allowed to continue, they will have negative implications on student learning outcomes in integrated thematic learning at the Bukittinggi City Primary School. To overcome the above conditions, it is necessary to find a solution through classroom action research, namely applying a scientific approach as an effort to improve student achievement (learning outcomes) in integrated thematic learning. The anticipated outcome is that it can make students think critically, creatively, actively, and pleasantly in learning by providing student-centred learning, which allows students to practise their communication skills. The teacher who is professional in carrying out the learning process considers several aspects, which are oriented towards the development of students and the way of thinking of students (Fitria et al., 2018).

Methods

This study employs a class action research (CAR) by using qualitative and quantitative data analysis with the research subjects of students in grade two of the 15 public elementary schools in Bukittinggi City. Classroom action research is research conducted by a teacher in their class through self-reflection to improve their performance as a teacher, so that the achievement of the results of the learning process can run well or increase student competency (Fitria, 2017).

The flow of the Kemmis and McTaggart model (Kunandar, 2011) consists of four stages: planning, implementation, observation, and reflection. The research data was collected in the form of observations, interviews, and tests of integrated thematic learning with the scientific approach. The data concerned matters pertaining to the planning and implementation of learning related to teacher and student behaviour, which includes learning interactions between the teacher-student, student-student, and students in integrated thematic learning. The data source of this research is an integrated thematic learning process with a scientific approach, including learning planning, and learning implementation. The data were obtained

from the subjects studied, namely, the teachers and students of grade two in public elementary schools.

The data collection techniques were completed by observation, and tests. The observations were made to observe the class setting of integrated thematic learning with a scientific approach. Based on the observation sheet, the researcher observed what happened during the learning process. The test was used to strengthen the observation data that occurred in the classroom, especially in the mastery of learning material items from student elements. The research instruments were collected based on the observations of lesson plans, the implementation of learning actions from the teacher and student aspects, and tests of the assessment of processes and learning outcomes. The data collection activities were completed over the course of a week.

Results and Discussion

Cycle One Results

The First Meeting

The results of the study in the first meeting included data planning, implementation, observation, and reflection.

Planning was arranged and realised in the form of a learning plan. This learning plan was arranged collaboratively between researchers and class two teachers.

The implementation occurred on a Thursday for a one-day learning activity, which began with the teacher asking students to observe images of the Garuda Garni Pancasila that were put on display. In the questioning step, the teacher motivated students to ask questions about the pictures displayed. In the reasoning step, the teacher asked questions and students answered by explaining the symbols contained in the Garuda Gardasil. Subsequently, in the step of trying, the teacher asked students to imitate reading the text that was read. Then, in the communicating step, the teacher asked each group to come to the front of the class to demonstrate the results of the group crafts.

In the stage of observation, there were two phases. Firstly, the observation of the learning implementation plan. Based on the observers' observations, the composition of the lesson plan components that the researchers composed were improved. The observations made by the observer of the lesson plan format obtained an assessment percentage of 80.6 per cent, with a good level of success. Secondly, was the learning implementation. The teacher displayed pictures related to the material in front of the class; prompted students to ask

questions about the images in the student book; conducted questions and answers with students about the Garuda Pancasila pictures; guided students in reading the text; and lastly, guided students in delivering the results of group crafts in front of the class, and in an easy to understand language. The results of the observations of the teacher activities obtained an assessment percentage of 68.8 per cent, with a lower success rate.

From the reflection in the first cycle of meeting one, it was concluded that the expected learning objectives had not been achieved properly. Thus, the improvement of integrated thematic learning with the scientific approach of the researcher continued in the first cycle of the second meeting, taking into account the obstacles encountered in the first cycle of the first meeting. The obstacles encountered in the first cycle of the first meeting will be corrected in the first cycle of the second meeting.

The Second Meeting

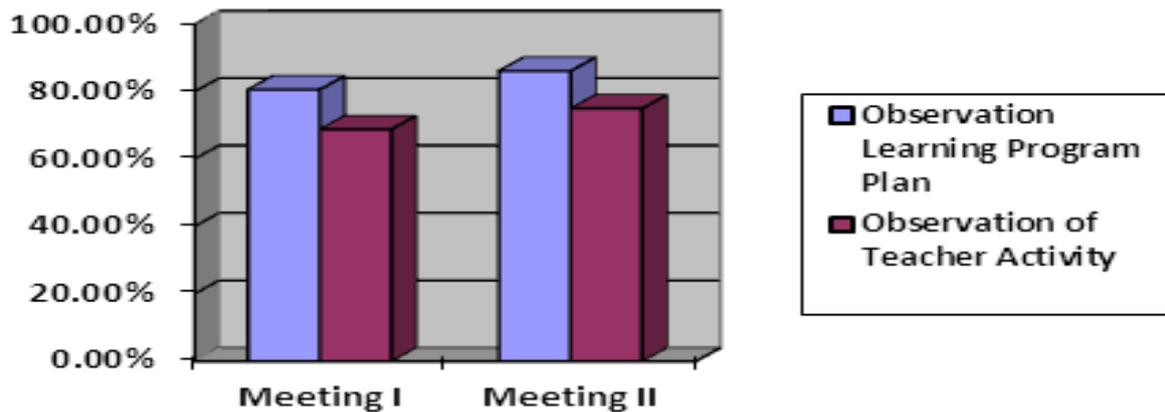
The results of the study in the second meeting included data planning, implementation, observation, and reflection.

The planning action in the first cycle of meeting two was completed as an effort to overcome the problems in learning that were found in the first cycle of meeting one. This learning plan was arranged collaboratively between the researchers and class two teachers and was based on the steps of a scientific approach.

The implementation was held on a Tuesday. In the subsequent step, students observed images relating to the second principle of Pancasila, and then asked questions about images relating to the second principle of Pancasila. In the reasoning activities, students explained the meaning of the second symbol of Pancasila. Moreover, students made pencil cases in groups, as determined by the teacher. Then students communicated the results of the group craft to the front of the class.

In the stage of observation, firstly, the lesson plans in the learning cycle one of meeting two were good, but there were still several shortcomings. The plans obtained an assessment percentage of 86.1 per cent, with a good level of success. Secondly, in the implementation of learning in this cycle, the teacher activities within the learning activities increased when compared to the first cycle of meeting one. The observations of the activities of teachers in cycle one, meeting two obtained an assessment percentage of 75 per cent, with a sufficient level of success. The student activities in cycle one of meeting two increased when compared to the first cycle of meeting one, and obtained an assessment percentage of 75 per cent, with a lower success rate. Further information regarding the observations of lesson plans and teaching activities in the first cycle can be seen in the graph below.

Graph 1. Observation data on lesson plans and teaching activities in cycle one



From the reflection on the first cycle of meeting two, it was concluded that learning had increased when compared to the previous meeting. However, there were still several shortcomings. Thus, improvement of the thematic learning process integrated with a scientific approach was continued by the researcher in cycle two, taking into account the obstacles encountered in cycle one of meeting two. Moreover, the constraints encountered in cycle one of meeting two were corrected in cycle two.

Cycle Two Results

The First Meeting

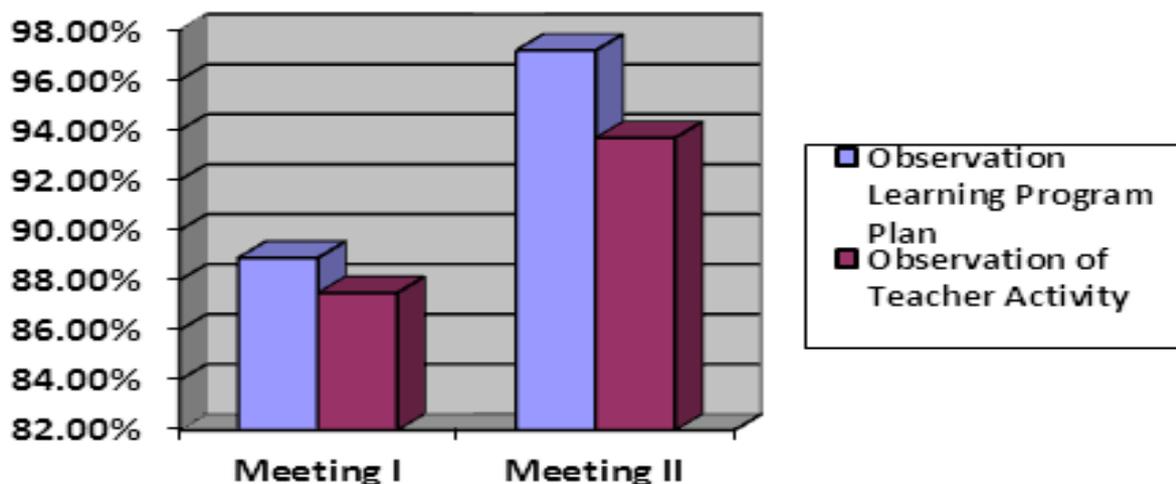
The results of the study in the first meeting of cycle two included data planning, implementation, observation, and reflection.

The implementation planning of integrated thematic learning using a scientific approach was arranged and realised in the form of a learning plan. As in cycle one, this learning plan was arranged collaboratively between the researchers and class two teachers.

The implementation occurred on a Wednesday for a one-day learning activity. The step of observing began with the teacher asking students to observe pictographs of vegetables displayed at the front of the classroom. The teacher prompted students to ask questions about the pictures displayed. In the reasoning steps, the teacher asked questions and students answered explaining the data presented in the form of pictographs. Then, in the step of trying, the teacher asked students to fill in the pictographs at the front of the class. In the communicating step, the teacher asked each group to come to the front of the class to demonstrate the results.

Firstly, the phase of observations considered the learning implementation plan. Based on the observers' observations, the composition of the lesson plan components were improved. The observations of the lesson plan format obtained an assessment percentage of 88.9 per cent, with a good level of success. Secondly, in the learning implementation, the teacher displayed pictographic pictures related to the material at the front of the classroom; prompted students to ask questions about the pictographic drawings; conducted questions and answers with students regarding the pictographic drawings; guided students in completing the pictograph data; and guided students in delivering the results of the group crafts in front of the class and in an easy to understand language. The results of the observations of the teacher activities obtained an assessment percentage of 87.5 per cent, with a good level of success. Further information regarding the observations of the lesson plans and teaching activities in cycle two can be seen in the graph below.

Graph 2. Observation data on lesson plans and teaching activities in cycle two



Through a reflection of the first cycle of meeting two, it was concluded that the learning objectives expected in the second cycle of meeting one were achieved well. Thus, an increase in integrated thematic learning with the scientific approach continued in the second cycle of meeting two by taking into account the obstacles encountered in the second cycle of meeting one. The obstacles encountered in cycle two, meeting one will be improved in cycle two, meeting two.

The Second Meeting

The results of the study in the second meeting of cycle two included data planning, implementation, observation, and reflection.

The planning of integrated thematic learning using a scientific approach is arranged and realised in the form of a learning plan. This learning plan was arranged collaboratively between the researchers and class two teachers.

The implementation of cycle two, meeting two was held on Thursday, 21 April 2016, for a one-day learning activity. The step of observing began with the teacher asking students to observe pictures of class activities. In the questioning step, the teacher prompted students to ask questions about the images in the student book. In the reasoning step, the teacher asked students to mention the ways to maintain class cleanliness. Subsequently, in the step of trying, the teacher asked students to practise how to maintain class cleanliness. Lastly, in the communicating step, the teacher asked each group to come to the front of the class to read poetry.

The observation phase began with the observation of the learning implementation plan. Based on the observers' observations, the composition of the lesson plan components were improved. The observations of the lesson plan format obtained an assessment percentage of 97.2 per cent, with a very good level of success. This was followed by an observation of the learning implementation. The teacher displayed pictures related to the material at the front of the classroom; prompted students to ask questions about the images in the student book; conducted questions and answers with students regarding class cleanliness; guided students in cleaning the class; and guided students in reading poetry in front of the class and in an easily understood language. The results of the observations of the teacher activities obtained an assessment percentage of 93.7 per cent, with a very good level of success.

From the reflection in the previous cycle, it was concluded that the learning objectives expected in cycle two of meeting two were very well achieved. Thus, an increase in the integrated thematic learning with a scientific approach has improved.

Discussion

Cycle One

Planning was conducted in the form of a lesson plan. As revealed by Majid (2014), a lesson plan describes the procedures and organisation of learning to achieve one basic competency set in the content standard, which has been spelled out in the syllabus. In the first cycle, the observation and assessment of integrated thematic learning lesson plans with a scientific approach was already in the good criteria. However, there were still several descriptors that had not yet appeared. Among them, the selection of teaching materials was not by the ruffle of teaching materials. For the next meeting, the teacher, in choosing teaching materials, adjusted even more to the selection and arrangement of teaching materials. The learning

material is a breakdown of the main material that contains facts, concepts, principles, and relevant procedures, and is written in the form of items by the formulation of competency achievement indicators. The selection of learning media is not undertaken by the learning objectives. For the next meeting, in the selection of learning media, the teacher was required to adjust to existing aspects. The media serves as an aid to the learning process to deliver learning material (Faisal, 2014). The learning methods are also not appropriate with the learning objectives, meaning that the learning that takes place is less meaningful for students. At the next meeting, it is better if the teacher is more creative in adjusting the learning method with the learning objectives. According to the Ministry of Education and Culture (Faisal, 2014), the learning method is a breakdown of the learning activities used by the teacher to create a learning atmosphere and learning process so that students reach the KD, which is adjusted to the characteristics of students and the KD to be achieved. The learning conducted by the teacher is also not by the predetermined time allocation, causing the teacher to use other subject hours at the end of the lesson. Therefore, at the next meeting, the teacher must adjust the time allocation that has been set, so that learning takes place on time. According to Haryati (2007), the estimated time required to reach one KD must take into account: the level of material difficulty, the scope of the material, the frequency of use of the material, and the level of importance of the material being studied, as well as the method of delivering the material.

The implementation of integrated thematic learning with a scientific approach found several aspects to consider, and is outlined as follows. In the initial activity, the researchers were not able to ask challenging questions to students to test the extent of the students' abilities in prior learning. Occasionally, the teacher may forget to convey the plan of observation activities, so students do not understand the activities to be carried out; the students always asked what activities would be carried out. The teacher was not able to master the class because the teacher was only focussed on the material presented, so the classroom conditions were noisy, with many students observed talking with their friends. The teacher did not implement the learning according to the planned time allocation, taking too long to give the students time to do the exercises, so the time needed was not enough. The teacher was not able to carry out the steps of the scientific approach as expected. In the closing activities, the teacher did not carry out follow-up actions by giving direction to the next activity, and the task of enrichment. The researcher only asked about the conclusion of learning. However, in the end, the researcher concluded the learning, not the students. At the core activity of the assignment of instructional material, the teacher did not present material systematically; easy to difficult, and from concrete to abstract. Sometimes, teachers remain convoluted in delivering material, so there is only the material delivered previously, and the teacher has not yet implemented contextual learning. Regarding the involvement of the students in learning, the teacher has not shown interpersonal relationships. Thus, there are students who have not been well remembered by the researchers. The students were not able to show their active participation

in learning. Meanwhile, in the 2013 Curriculum, students must be active compared to teachers, and teachers should only be facilitators in learning. The students were not able to carry out learning through the steps of the scientific approach, meanwhile it is expected that they must do so.

Cycle Two

The plan of implementing learning in cycle two increased from the planning of learning in cycle one. The plan for implementing learning in cycle two had very good qualifications. The implementation of learning in cycle two was presented in one meeting. The learning plan for learning in cycle two increased through the following: indicators used operational verbs; learning objectives were detailed and clear; and assessments were clear, detailed, and complete.

Based on the observations and evaluations of the lesson plan, the second cycle increased from the previous cycle. Namely, the criteria were very good. However, the selection of the teaching materials was not completed by the content of the teaching materials. This is because the researchers did not fully understand how the teaching material should be drawn in an integrated thematic learning context. According to [10], before implementing the learning process, a teacher is obliged to make and provide learning materials. The learning material is only one component in the learning system, which plays an important role in helping students achieve the indicators that have been set in the basic competencies. The selection of learning media is not undertaken by the learning objectives. For the next meeting, in the selection of learning media, the teacher must adjust to the existing aspects.

The data analysis conducted on the observations of the lesson plan found an obtained average of 93.1 per cent, with very good qualifications. Based on the data exposure process and the learning outcomes described above, the researchers can be used as a basis for improving the student learning development. The process and results obtained by the students in learning can be used by the teachers as a guide in analysing the student learning progress in an integrated thematic learning context. From the process and results obtained in cycle two, the implementation of the cycle has been carried out very well, and the researchers have succeeded in increasing integrated thematic learning with a scientific approach in class two of the public elementary schools in Bukittinggi City. According to Mulyasa (2014), in terms of the results, the learning process is said to be successful if there is a positive behaviour change in the students themselves or at least in a majority, at a rate of 80 per cent. The results of the data analysis upon the implementation of integrated thematic learning with a scientific approach in the second cycle obtained an average of 90.6 per cent, with a very good criteria on teacher activities, and on student activities, an average of 90.6 per cent, also with a very good criteria.

Based on the data presented above, it is known that the learning process has improved due to an increase in the planning of the implementation of learning. According to Sagala (2012), the learning process is methodologically rooted in the role of the educator, namely the teacher, and the pedagogical learning process occurs in students. Furthermore, in the form of teaching and learning interactions in an educational atmosphere. Namely, interactions that are conscious of the goal, meaning that the interaction that has been planned for a particular goal is, at least, the achievement of instructional goals or learning objectives that have been formulated in the unit of study.

Conclusion

This research concludes that thematic learning with a scientific approach is able to provide a change in the student learning experience. All students' potentials, both physically and non-physically (thinking or reasoning activities), develop well. The teacher actions that condition students' learning experiences may involve the sensory elements of the eyes and ears, and their mental activities can provide learning that is more satisfying to students. The stages of action in the classroom research cycle can change the teacher's understanding of the nature of learning the students well. The teacher acts as a facilitator and mediator in learning, and students are provided a greater opportunity to learn, and experience directly through a scientific approach.

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