

THE CULTIVATION OF CIVIL VALUES THROUGH THEMATIC-BASED SCIENCE PRACTICES IN LOW GRADE ELEMENTARY SCHOOLS

Djoko Hari Supriyanto¹, Haryanto²

^{1,2} Universitas Negeri Yogyakarta
amsa004@brin.go.id

Keyword

*natural science practicum, thematic,
values of ethics*

Abstract

Learning is a conscious effort to get change behavior overall, both aspects cognitive, affective and psychomotor. So far in in practice, the learning process at school it seems more likely to emphasize on achievement aspect changes cognitive. Whereas affective abilities are still lacking attention. In learning, affective abilities relate to ethical values. The values of character must be instilled and received serious concern from parties involved in education. Science lessons, which so far have been considered far from affective aspects, can also be used to instill moral values, namely by carrying out practicums. The science practicum applied so far is more likely to be carried out with a conceptual approach, so that if applied it will make learning fragmented. While students who are at elementary school low class still see everything as one wholeness (holistic) so that thematic learning is used in the lower grades of elementary school. For this reason, a design for science practicum in low grade elementary schools is needed which can be applied through thematic learning. From the description above so the purpose of this research is to know practical application of IPA based thematically to embed moral values to low grade elementary school students. This activity is carried out January to March 2023 at Tambakromo 2 public elementary school, Padas District, Ngawi Regency. The subjects in this study were all class students, totaling 24 students. Data collection was carried out by observation and test techniques. which method used in this research is Classroom Action Research or Action Research Class with two cycles. From the implementation of cycle I activities and II it can be seen that an increase in cognitive and psychomotor values. The affective ability of students also increased, which was marked by an increase in the percentage for good and very good criteria. Meanwhile, for the criteria of sufficient, less, and bad, there was a decrease. This increase in students' affective abilities also shows an increase in students' moral values. From research implementation class action It can be concluded that the application of thematic-based science practicum is able to instill values manners on elementary school students low class.

INTRODUCTION

Education often referred to as an investment human resources, and as one's social capital. Education as a necessity of life, plays a social role or support for growth and also guides human journey, be it individual society, nation and country. Position education into an activity that encapsulates long-term interests length or time front. Not only inner needs common sense, but as basic needs all life. Every human need education, until when and wherever he is. Therefore, educational demands now and time future must be directed at improving the quality of

intellectual and professional abilities as well as attitudes, personality and morals Indonesian people on generally. With the ability and Indonesian attitude such expected to be seated yourself with dignity in society world in era this globalization. To prepare for the above, it must be started from an early age. Education Fundamentals play a dominant role in this. Paying attention to children's education is the same as preparing the next generation.

Various innovations have been made in the world of education, especially in elementary schools, both in terms of physical buildings, curriculum, human resources and learning. The results of several studies show an increase in student achievement from the application of learning innovations. The problem that arises next is that the success of students in learning so far has been more centered on cognitive aspects and has not equipped students with affective and psychomotor aspects. Whereas the expected learning is holistic (covering cognitive, affective, and psychomotor domains).

Learning in the view of an individual's conscious effort in obtaining change overall behavior, good cognitive aspect, affective and psychomotor. Until currently in practice, learning process at school it seems more likely emphasize on achievement change cognitive (intellectual) aspects, which are carried out through various forms of approaches, strategies and certain learning models. Meanwhile, learning that specifically develops affective abilities seems to have received less attention. Even if done may only be used as an accompaniment effect (nurturant effect) or become a hidden curriculum, that is inserted into the main learning activities, namely cognitive learning or psychomotor learning.

Usman's research results (in Made Pidarta, 2014: 91-92) say education less emphasis on affection, creativity, thinking, constructive attitudes and the foundation of morality, so that education generate life which is more materialistic. Then it turns out that the results of education which are only intellectualistic cannot solve everything problem in human life. Education produces graduates who are indeed intelligent, clever but unable to be applied in society.

[Frenky Suseno Manik \(2019:1\)](#) suggests, sreally acknowledged or not, the system our education is education system secular-materialistic. This system gave birth smart people master science- technology through education general ones followed. Will however, such education is evident failed to form personality learners. Secular education of course can make people clever, but personality integrity or behavior issues, no guarantee whatsoever. The secular education system will give birth smart guy though blind or weak understanding of values that manners sublime. More bad again, resulting from is people clever but corrupt. Professional but morally depraved.

In line with the opinion above, Ma'rifat Iman (2017: 1) argues that indeed this nation has given birth to many smart people, but on the other hand these smart people are actually smart. That is, in reality it is smart people who are the culprits of corrupt behavior. Smart people that are the cause of damage to the country.

Conceptually and empirically, it is believed that the affective aspect plays a very important role in a person's level of success in work and life as a whole. Based on the description above, ethical values must be instilled and receive serious attention from the parties involved in education, especially in elementary schools. Children at primary school age, especially the early/lower grades, are a very important period for receiving the basic knowledge, attitudes and behavior, so that character education must be instilled in depth at this time.

Educational Goals Character is planting certain values within themselves student. the teaching starting from certain social values, namely the values of Pancasila and other noble values of Indonesian culture, which grow and develop in Indonesian society. In learning, ethical values relate to affective abilities. So far, to instill affective aspects, more emphasis has been placed on certain subjects, such as PKN, Religion, Arts and Culture, while in other subjects, the affective aspect has only been an accompanying effect that appears by itself. Made Pidarta (2013: 107) argues that what is true is that all subjects given in educational institutions must be involved

in the development of this affection. Each subject must support the development of affection. Because in essence, each subject has affective content to be internalized by students.

Based on the opinion above, science subjects which have been considered far from affective aspects can also be used to instill ethical values. Science teaching should involve all aspects of students' abilities. This is in line with the opinion of Moh Amin (2018: 42) who argues that the science learning process in elementary schools requires active involvement of students and aims to develop cognitive, affective, and psychomotor mastery in students.

Natural Sciences (IPA) or what is called science is a subject related to how to systematically find out about nature, so that Science is not just mastery a collection of knowledge in the form of facts, concepts, or principles only but also is a process invention. Science Education expected to be vehicle for participants teach to learn yourself and the environment, as well development prospects further in apply it inside everyday life. The learning process emphasizes providing direct experience to develop competencies in order to explore and understand the natural surroundings scientifically (Depdiknas,2006).

IPA is required in daily life to meet through human needs solving problems identifiable. The application of IPA needs to be done wisely so as not to bad impact on the environment. Through science education is expected to be a vehicle for students to study themselves alone and environment, as well as prospects for further development in apply it in everyday life. So far, in teaching science, we generally ignore the variations that occur in nature, so that the principles and theories are generally accepted. Therefore, these principles and theories cannot be used directly in the real world, because in the real world there are variations that cannot be ignored. Therefore, for natural management, experiments or practicum are needed, so that the correct application of principles and theories can be known. Thus, at school students must learn to conduct experiments or practicums, so that students can use the principles and theories they learn for daily needs in society and their natural environment, in addition to meeting the needs of continuing their studies.

With practicum, students learn the basic concepts of natural science more effectively through personal experience. Students will learn to trust their own ability to recognize and explain natural phenomena and impacts when they are guided to formulate and test hypotheses and improve skills in expressing personal opinions.

Rustaman (2016) suggests four important reason practicum activities in science, namely: 1) practicum generate motivation to learn science, 2) practicum to develop basic skills of conducting experiments, 3) practicum be a learning vehicle scientific approach, and 4) practical support subject matter. In science learning in elementary school, practicum implementation is in accordance with the level of development of students, especially lower classes who have a stage of concrete operational thinking. However, the problem is that the applied science practicum is more likely to be carried out with a conceptual approach, so that if applied it will make learning fragmented. While students who are at school elementary grades one, two, and three (low class) are in the early age range. At that age all aspects of intelligence development grow and develop growing extraordinarily. In general, the level of development still sees everything as a whole (holistic) and capable understand the relationship between simple concept. Still learning process depend on concrete objects and direct experience. That is why the application of the 2006 education unit level curriculum in low grade elementary schools used thematic learning. Thematic learning is integrated learning using themes to link several subjects so as to provide

meaningful experiences to students. (Sutirjo, 2008) argued that Thematic learning provides integrated learning opportunities that emphasize more child involvement in learning, creating children are actively involved in the learning process and empowerment in solving problems appropriate growth of creativity student needs. Furthermore, it is expected that students can learn and play with high creativity (Mamik, 2015).

From the description above, we need a science practicum design in low-grade elementary schools that can be applied through thematic learning. So by doing practicum, students will also

learn a lot of material from other subjects. The end result is an increase in student learning outcomes that are not only centered on cognitive and psychomotor abilities as has been the case so far, but also include the affective domain. If implemented, then through science practicum it is hoped that it will be able to instill ethical values in students. From the description above, the purpose of this study was to find out the application of thematic- based science practicum to instill ethical values in low grade elementary school students.

METHOD

This activity was carried out from January to March 2023 at Tambakromo 2 public elementary school, Padas District, Ngawi Regency. The subjects in this study were all class students, totaling 24 students.

Data collection was carried out by observation and test techniques. Observations were made to obtain students' affective values, which were then used as a reference for the development of students' moral values. Observations are carried out during the learning activities. In addition to measuring the level of affective ability, observation is also used to measure students' psychomotor abilities. While the test technique is used to measure student achievement.

The method used in this research is Classroom Action Research or Classroom Action Research. Classroom action research is an examination of learning activities in the form of an action that is deliberately raised and occurs in a class together (Suharsimi Arikunto, 2006:3). In this study, two cycles of action were used in which each cycle was carried out in stages: planning, acting, observing, and reflecting.

The research design is as follows:

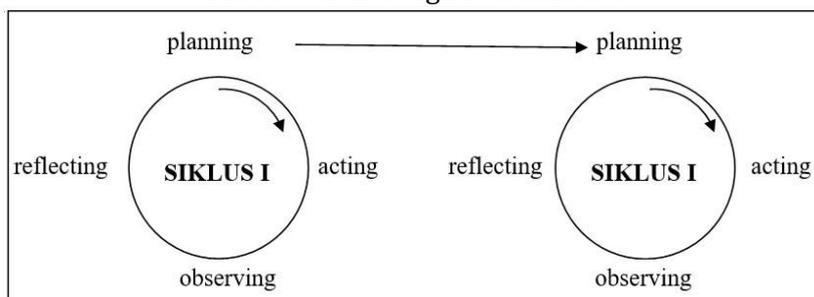


Figure 1. Classroom Action Research Design

In the implementation of cycle I, the planning stage (planning) is carried out with the following steps.

1. Determine the basic competencies that will be used for practicum. In this case the basic competencies used are: "Describing changes in the properties of objects (size, shape, color, or taste) that can be observed as a result of burning, heating, and being placed in the open air"
2. Create a thematic network of basic competency in other subjects. In this case the basic competencies used are:
 - Indonesian : carry out activities based on something heard overcome simple problems that exist in the environment
 - SBK : make a design model of objects moved by the wind and paper
 - Mathematics : measuring objects around students get to know measuring tools.
 - PPKN : get to know the history and background of the youth oath practicing the values of the youth oath in everyday life
3. From activities 1 and 2 a theme was created, namely experience
4. Designing practicum guides with thematic learning.
5. Develop evaluation sheets to measure students' affective and psychomotor abilities.
6. Prepare tools and materials as well as media needed in the implementation of learning.

At the implementation stage (acting) carried out with the following steps.

1. Students make groups where each group consists of 4 students.
2. Motivating students about the importance of the activities to be carried out and their benefits in everyday life.
3. Provide direction to students about the ethical values that will be developed in this activity. These values include: discipline, mutual respect, being polite, speaking politely, being able to work together, passionate, brave, and so on.
4. Guiding each group to carry out activities as in the practicum guide.
5. The group task is to make a report and present the results.
6. Conduct class evaluation and discuss the results of the presentation

At the observation stage (observing) carried out recording and evaluating during the process of implementing student activities. The assessment was carried out to determine students' affective and psychomotor abilities. Observations were also made during the discussion.

At the reflection stage, a review is carried out on the activities that have been carried out. From here it will be known the strengths and weaknesses of the implementation of cycle I and used for improvement in cycle II. The implementation of cycle II refers to the results of the implementation reflection in cycle I. The steps taken at the planning stage are to make a different practicum design with the same basic competencies. The other stages refer to the implementation of cycle I.

FINDINGS

From the implementation of activities in cycle I, the following data results were obtained:

1. The average value of cognitive abilities obtained by students is 64.17 (rating scale of 100)
2. Affective ability values obtained by students as listed in table 1 below.

Table 1. Value of Cycle Affective Ability I

Criteria	Affective aspects are assessed							Information
	1	2	3	4	5	6	7	
Very well (%)	0,00	4,17	4,17	4,17	0,00	12,50	0,00	
Well (%)	8,33	12,50	20,83	20,83	8,33	41,67	4,17	
Enough (%)	25,00	29,17	41,67	37,50	41,67	33,33	37,50	
Not enough (%)	50,00	41,67	25,00	29,17	29,17	4,17	50,00	
Bad (%)	16,67	16,67	8,33	8,33	20,83	8,33	8,33	

Information:

- | | |
|-----------------------|-------------------|
| 1= discipline | 5 = work together |
| 2= respect each other | 6 = excited |
| 3= be polite | 7 = be brave |
| 4= polite | |

3. The psychomotor ability values obtained by students are as listed in table 2 below.

Table 2. Psychomoto Ability Valueric Cycle I

Psychomotor aspects assessed	Criteria				Information
	4	3	2	1	
Preparing tools and materials (%)	16,67	33,33	50,00	0,00	
Carry out practicum (%)	16,67	16,67	50,00	16,67	
Storing tools and materials (%)	0,00	33,33	66,67	0,00	
Generate report (%)	16,67	16,67	50,00	16,67	

Presentation	(%)	16,67	50,00	33,33	0,00
--------------	-----	-------	-------	-------	------

Information:

- 1 = done incorrectly and slowly
- 2 = implemented incorrectly and quickly
- 3 = implemented correctly and slowly
- 4 = implemented properly and quickly

From the implementation of activities in cycle II, the data results are obtained as follows:

1. Cognitive average value obtained by students is 85.5
2. Affective ability values obtained by students as listed in table 1 below.

Table 3. Value of Cycle Affective Ability II

Criteria	Information	Affective aspects are assessed						
		1	2	3	4	5	6	7
Very well (%)		41,67	29,17	33,33	45,83	29,17	45,83	12,50
Well (%)		50,00	58,33	54,17	50,00	29,17	45,83	50,00
Enough (%)		8,33	12,50	12,50	4,17	37,50	8,33	33,33
Not enough (%)		0,00	0,00	0,00	0,00	4,17	0,00	4,17
Bad (%)		0,00	0,00	0,00	0,00	0,00	0,00	0,00

Information:

- 1 = discipline
- 2 = respect each other
- 3 = be polite
- 4 = polite
- 5 = work together
- 6 = excited
- 7 = be brave

3. The psychomotor ability scores obtained by students are as listed in table 4 below.

Table 4. Value of Psychomotor Ability Cycle II

Psychomotor aspects assessed	Information	Criteria			
		4	3	2	1
Preparing tools and materials (%)		83,33	16,67	0,00	0,00
Carry out practicum (%)		66,67	16,67	16,67	0,00
Storing tools and materials (%)		83,33	16,67	0,00	0,00
Generate report (%)		50,00	33,33	16,67	0,00
Presentation (%)		66,67	33,33	0,00	0,00

Information:

- 4 = implemented properly and quickly
- 3 = implemented correctly and slowly
- 2 = implemented incorrectly and quickly
- 1 = done incorrectly and slowly

DISCUSSIONS AND CONCLUSION

From the implementation of cycles I and II, it can be seen that there was an increase in students' cognitive scores, from 64.17 to 85.50. This means an increase of 21.33. Students' psychomotor abilities also experienced an increase both in the preparation of tools and materials (increased 66.66%), implementation of practicum (increased 50%), storage of tools (increased 83.33%), making reports (increased 33.33%), and presentations reports (50% increase).

The affective ability of students also increased, which was marked by an increase in the percentage for good and very good criteria. Meanwhile, for the criteria of sufficient, less, and bad, there was a decrease. This increase in students' affective abilities also shows an increase in students' moral values. The percentage increase and decrease from cycle I and cycle II can be seen in table 5 below.

Table 5. Percentage of Increase in Affective Ability

Criteria	Affective aspects are assessed							Information
	1	2	3	4	5	6	7	
Very well (%)	41,67	25	29,16	41,66	29,17	33,33	12,5	
Well (%)	41,67	45,83	33,34	29,17	20,84	4,16	45,83	
Enough (%)	-16,67	-16,67	-29,17	-33,33	-4,17	-25	-4,17	
Not enough(%)	-50	-41,67	-25	-29,17	-25	-4,17	-45,83	
Bad (%)	-16,67	-16,67	-8,33	-8,33	-20,83	-8,33	-8,33	

Information:

- | | |
|------------------------|-------------------|
| 1 = discipline | 5 = work together |
| 2 = respect each other | 6 = excited |
| 3 = be polite | 7 = be brave |
| 4 = polite | |

The sign (-) indicates a decrease

From these results it can be concluded that moral values in low grade elementary school students can be instilled through thematic-based science practicum. From the implementation of classroom action research conducted on grade 3 students of Tambakromo Public Elementary School, Padas District, Ngawi Regency, it can be concluded that the application of thematic-based science practicums is able to instill ethical values in low-grade elementary school students. From these results, it is necessary to consider further developing various kinds of science practicum that can be applied in thematic learning in elementary schools with low grades.

REFERENCES

- Bayram, S. (2021). World journal on educational technology: Current issues. *World Journal on Educational Technology: Current Issues*, 13(4), 1506–1517.
- Dwi Yuli Susanti. 2008. Thematic Learning as an Effort to Improve Mathematics Learning Outcomes for Class 3 Students of SD Negeri 034 Samarinda Ulu. <http://indokrip.com> accessed on 12 February 2009.
- Ministry of National Education. 2006. Regulation of the Minister of National Education No. 22 of 2006 concerning Content Standards for Elementary and Secondary Education Units.
- [Frenky Suseno Manik. 2006. Education in Indonesia: Problems and Solutions](#)
- Made Pidarta. 2007. *Educational Insights*. Surabaya: Unesa University Press.
- Ma'rifat Faith. 2007. *Solutions to Education Problems in Indonesia*.
- Rustaman, NY, Dirdjosoemarto, S., Yudianto, SA, Achmad, Y., Subekti, R., Rochintaniawati, D., & Nurjhani, MK 2003. *Biology Teaching and Learning Strategies*. Bandung: Department of Biology Education FMIPA UPI.
- Suharsimi Arikunto. 2006. *Class Action Research*. Jakarta: Rineka Cipta.
- Agranovich, Y., Amirova, A., Ageyeva, L., Lebedeva, L., Aldibekova, S., & Uaidullakzyzy, E. (2019). The formation of self-organizational skills of student's academic activity on the basis of "time

management" technology. International Journal of Emerging Technologies in Learning, 14(22), 95-110. <https://doi.org/10.3991/ijet.v14i22.11755>