

Toward the Implementation of an Integrated Scientific Instructional Model on the Development of Students' Moral Character

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Abstract - A scientific approach has been very popular in many countries to be chosen as a learning model to reach the purpose of their curriculum. However, the learning model has not been able to fully reach the purpose. Last year we did a research and founded an integrated scientific instructional model, which is theoretically able to fulfill the purpose. So, the purpose of this research is to know the impact of the application of the integrated scientific instructional model on the development of students' moral character. The research was conducted in the form of a test-retest experiment. Qualitative data were analyzed in the form of descriptive qualitative, argumentative analyses. While Quantitative data were analyzed with t-test technique. Based on this research, we have found that the application of the integrated scientific instructional model on the instructional process of social studies was able to develop more than 26 % of the instilling of students moral characters compared to the application of scientific approach contained in the content of social studies to the student intact. This is due to the fact that in the modeling process the students rationally understand the values learned, why the values need to be done, what are the benefits, are accustomed to, until finally the students increasingly feel the benefits of the values done in their lives.

Keyword - moral character, integrated scientific moral character instructional model, moral value education.

I. INTRODUCTION

Moral education is a crucial component for all schools [1]. Formal education institutions, as an official container coaching children and young people, is expected to increase its role in shaping the character of learners through increasing the intensity and quality of education on moral character. The Indonesian government welcomed insistence by pouring the main target to be achieved in the national curriculum, namely the formation of attitudes and moral character of the young generation as in [2]. The problem though in the national curriculum has set the values of moral-character to become the main target of achieving the goals of education, have chosen learning model really be learning model, when it is applied, capable of achieving these objectives?

Character education is a specific approach to morals or values education, which is consistently linked with citizenship education [3]. Educational experts generally agree on the importance of efforts to increase the intensity and quality of moral-character education in formal education. However, there are differences of opinion among them about the approach and model of moral-character education. Associated with the approach, some experts suggest the use of moral-character education approaches developed in western countries, such as the approach of cognitive moral development, value analysis approach, and values clarification approach. Others suggest the use of traditional approaches, namely through the instilling of certain social values in self-learners. Values and moral-character education in the school curriculum in Indonesia, the national

curriculum, developed a model of learning with the scientific method approach. Is the scientific method approach is able to achieve the goal of education values and moral-character expected? Based on the study of various theories are doubt that through the scientific method is able to achieve the goal of education values, attitudes, and character expected. Step-by-step approach to learning that is applied to the scientific method, only able to familiarize learners scientific attitude in learning, namely the process of receiving, searching, collecting, formulate, and report information [2], has not been able to get used to the formation of attitudes as expected by the national curriculum, namely "respect and appreciate the teachings of their religion (first core competence)" and the attitude expected by national curriculum, namely "respect and appreciate the honest behavior, discipline, responsibility, caring (tolerance, mutual aid), mannered, confident, in interacting effectively with the social and natural environment in the range interaction and existence "(second core competence) [2].

Verbal and logical processes are privatively attributed to the people's capability to infer a moral value or law [4]. Based on the results of studies from a variety of values educational approaches such as moral development approach, value analysis approach, and value clarification approach, can be concluded that something of value will only be internalized into the individual if he understands the values received (a) understood analytically, argumentatively, rationally, [5] (b) perceived to be useful and, (c) is performed repeatedly [6]. Rationally, a person who understands and makes value judgments analytically, argumentatively and rationally, and feels that value has benefits on him, he will tend to desire to do (Victor [7]. After doing it several times and getting more beneficial for him then he will become accustomed. Habits that have formed in him, then he will feel there is something missing or weird in him if not or have not done. When these feelings have been formed, will be a belief in him. It is this belief that keeps him going and maintains it. At this latter stage, the values have been embedded or formed in her character. When learners only learn through the process of observing, asking, collecting data or doing experiments, analyzing and concluding data, and communicating the conclusion, he just acquired scientific knowledge and formed a scientific attitude, but has not guaranteed moral-formed spiritual and social character in him. Such a process has not yet guaranteed the learned spiritual and social values learned to be internalized.

The next question, what can the most appropriate learning model be implemented in the implementation of the attitude and mora-character education in Indonesia? Looking at the

problems and the theories we have tried to develop a learning model, called an integrated scientific moral-character instructional model, which is theoretically able to fulfill the purpose. So, the purpose of this research is to know the impact of the application of the integrated scientific moral-character instructional model on the development of students' moral character.

II. RESEARCH METHODS

This paper is intended to describe the impact of the implementation of an integrated moral-character instructional model to the instilling of the moral-character of junior secondary school students.

Related to the purpose, the research was conducted by testing the effectiveness of the model implementation in the instilling of the moral-character of JS3 in the form of test-retest experimental research. The elements of students attitudes and character observed were "respect and appreciate the teachings of their religion, respect and appreciate the honest behavior, discipline, responsibility, caring (tolerance, mutual aid), mannered, confident, in interacting effectively with the social and natural environment. The population of this research were the second grade of public junior secondary schools in Bengkulu, at least, accredited B. The population is taken with a minimum standard accredited B intended to obtain schools that have been managed regularly, so that when conducted by researchers the sample is obtained from both the pilot sample and the control sample are homogenous. Samples were taken 25% from 10 counties/cities. Samples were taken 25% from 10 districts/cities. After being randomly selected, 2 regencies (Seluma and Bengkulu Tengah regencies) were obtained and 1 city, namely, Bengkulu Municipality. School samples were taken 25% of all junior secondary schools proportionally from the two districts and one city. After being selected at random, this samples of research consisted of 15 classes from 10 junior secondary schools, with a total number of students were 480. The subjects of this research were social studies teachers and students. One group pretest-posttest experimental design was implemented in research. Based on a set of observation sheets has been planned, teachers and peer students observed students' character changes. Data were analyzed with t-test technique. The elements of moral character observed consisted of five elements of attitude. They are scientific attitude, responsibility, discipline, and cooperative attitude.

III. RESULTS AND DISCUSSION

A. Result

As Learning model of scientific approach and integrated scientific instructional model, each has specific characters, so each of them has a specific impact of developing elements of moral character.

1. The impact of the implementation of the learning model of the scientific approach on the changes of students moral character.

The learning model of the scientific approach as an approach of learning has a characteristic of *core activities as following*: (1) *Observing*, namely: (i) Learners are asked for observing something that wants to be learned. (ii) Based on observations, students were asked for discussing in groups and write down the things you want to know from observation. (iii) Learners are encouraged to select whether the things they want to know is in conformity with the purpose of learning, if not, learners are asked to fix. (iv) If the things they want to know not all include learning objectives, then the teacher can add things that are related to the learning objectives. (2) *Asking*, namely (i) Learners are required to discuss in groups to formulate questions based on things they want to know from the observation. (ii) One of the representative groups of students were asked to write the formulation of questions on the board. (iii) Students are required to discuss with the group to answer the questions according to what being known. (3) *Collecting*

Data/Information: students were asked to collect information/data to answer questions that have been formulated from a variety of sources, such as: reading learners books search the internet or reading books in the library. (4) *Associate/reasoning data*, namely, (i) Learners are required to process and analyze the data or information that has been gathered from various sources to answer questions that have been. (ii) Students are asked for discussing in groups to draw conclusions from the answers to the questions that have been formulated. (5) *Communicate*, namely: (i) Students in the group were asked to present the results of the conclusion of the answers to questions that have been formulated. (ii) The other group was asked for giving a response to the presentation of the results of the group conclusions. (iii) Learners with the teachers take the conclusion in answer to the questions. *Closing activities*: (a) Learners are asked for reflecting on the learning process associated with the mastery of materials, approaches and learning model used. (b) Learners are given the message about values and morals. (c) Learners are given the task to enhance the results of the report group discussion about the answers to questions that have been formulated to be collected to teachers. (d) Learners are given the task for reading material in the next sub-themes.

After 10 (ten) weeks of the implementations of the scientific approach in the process of learning, changes of the students' moral character can be seen in Table 1.

Table 1. Changes of The Students' Moral Character After The Implementations of The Scientific Approach

The elements of moral character observed	Percentage of Students moral character changes			
	Very good	Good	Moderate	Lacking
Religious obedience	16.07	28.12	36.87	18.33
Scientific attitude	60	22.71	11.04	6.25
Responsible attitude	18.12	30.42	39	12.5
Discipline attitude	16.46	30	38.84	12.92
Cooperative attitude	20	29.50	40.83	11.67

2. The impact of the implementation of the integrated scientific moral character instructional model on the changes in students moral character.

Integrated scientific instructional model is meant learning activities that not only develop a scientific attitude of learners in exploring, analyzing, organizing and communicating concepts learned knowledge, but also to explore and analyze the values contained in the lesson is being learned and how

the application of the values that in everyday life at school, family and society. In general, learning steps of the integrated scientific instructional model is as follows. *Core Activities (1)* Students *make observations* on a phenomenon that an image/video, neighborhoods to identify the things that we want to know from observation. (2) Students *formulate questions* based on things they want to know at the time of observation. These questions include questions related knowledge, skills, and values that want to be excavated from

the contents of the subjects to be studied. (3) Learners *collect data or information* to construct the concept of knowledge, skills and values and attitudes that can be learned from the content of the lesson material resources through a variety of techniques. (4) Learners to *reason and associate with activities* (a) analyze and conclude the data or information collected to construct knowledge and develop skills; (b) *explore and discuss the values* contained in the subject matter rationally why the values that need to be understood, implemented, maintained, and used as a handle to behave as individuals, groups and in public life; (c) *developing a joint activity* is a manifestation of values is reasonably acceptable; (5) Communicate conclusions by presenting it to the class (good conclusions about the concept of knowledge, skills

development as well as implementation and preservation of the values obtained in daily life. (6) *Closing Activities*: (a) Students are required to improve the understanding of the material that has been studied through a variety of learning resources; (b) Learners are given moral messages, encouragement to apply the design activities have been made; (c) Prayer together as gratitude for the grace of God the almighty one. (7) *Follow-up activities*: Recalled and monitored along with the learners to the application of the moral values that have been studied in daily life.

After 10 (ten) weeks of the implementations of the scientific approach in the process of learning, changes of the students' moral character can be looked in Table 2.

Table 2. Changes of The Students' Moral Character After The Implementations of The Integrated Scientific Moral Character Instructional Model

The elements of moral character observed	Percentage of Students moral character changes			
	Very good	Good	Moderate	Lacking
Religious obedience	54.79	28.12	28.64	61.25
Scientific attitude	60.42	23.54	11.04	5.00
Responsible attitude	57.71	30.42	36.87	12.50
Discipline attitude	55.83	30.00	38.54	10.83
Cooperative attitude	58.12	30.83	36.46	11.67

On the basis of table 1 and 2, we can see that through the learning process with a scientific approach it is able to increase 60% of students' scientific attitudes at a very good level. While the development of other elements of attitude is very low, the attitude of Religious Obedience is only 16.07%, the responsive attitude is only 18.12%, discipline attitude is only 16.46, and Cooperative attitude is only 20. While the learning process with an integrated scientific moral character instructional model was able to improve all the moral elements of the student's character at a very good level, namely 54.79% of students on the element of Religious

Obedience, 60.42 on the character Scientific attitude moral element, 57.71% of students on the element Responsive attitude, 55.83% of students on the attitude discipline element, and 58.00 on the element of Cooperative attitude.

Based on collected data from the results of the experiment between the scientific approach and integrated moral character instructional model, then analyzed by the method of data analysis Paired Sample SPSS Statistics 16. The results of the analysis areas we can look at in table 3.

Table 3: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Posttest	3.15	387	.469	.024
	Pretest	2.49	387	.339	.017

Table 4: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Posttest & Pretest	387	.114	.025

Table 5: Paired Samples Test

Paired Differences								
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	do	Sig. (2-tailed)
				Lower	Upper			
Pair 1								
Posttest - Pretest	.662	.546	.028	.608	.717	23.85	386	.000

B. Discussion

Based on the analysis of the data SPSS 16 such observations (as shown in Table 1 and Table 3) we find that the value of 23.848 t and significance of 0:00 was under the 95% level of significance. This means there are significant differences between the attitudes and character of students that had been learned by social studies teachers using a scientific approach with students that had been learned by social studies teachers using the integrated scientific moral values instructional models. This difference we can see a real if we consider the average score between the average score of students' attitude and character that had been instructed by social studies teachers using a scientific approach and the average score of students' attitude and character that had been instructed by social studies teachers using integrated scientific moral-values instructional models. The average score of the results of trials using a scientific approach found an average score of the attitude and character of students at 2:49, while the average score of students that had been instructed by social studies teachers using "integrated scientific moral-values instructional model" found the average score of the students' attitude and character of 3.15. Data from the analysis showed that there were differences an average score of attitude and character between the use of scientific approach and the use of integrated scientific instructional models for $2:49 < 3:15$ (1.05798). In other words, there were average score differences between the average score of attitude and character using the scientific approach and using integrated scientific moral-values instructional model "0.66 or = 26%). This means that the application of the learning model named "integrated scientific moral-values instructional model " was able to increase changes in attitudes and character of learners by 26%, which means that the learning model "integrated instructional scientific model" is very effective to enhance the character of changes in values and attitudes of learners.

The results of the research showed that learners being learned by using integrated scientific moral-values instructional model are much faster growing spiritual attitudes, social attitudes (honest, discipline, responsibility, caring, tolerance, cooperation), polite, confident, in interacting effectively with the social and natural environment in comparison with the application of scientific approach approach. This happens because of the integrated scientific moral-character instructional model, learners are deliberately invited to explore, understand, and make sense of the values contained in the subject matter being studied. Digging experiences, understanding and making sense of values that exist in the content of learning material makes learners become totally accept or logical reason why such values that need to be viewed, copied and applied in society. This awareness makes students feel happy and want to maintain those values. In other words, this awareness makes the values embedded into itself or into the attitude and character of students. This is in line with the opinion of the Dharma Kusuma, Triatna and Johar Permana, that the logic and rationality that is the important measure to produces a rich person's decisions [9]. Someone will do and do it steady when everything is done rationally acceptable. Examples of behavior can be easily accepted if anything; it has a sense of acceptance. Something that is accepted by the mind will develop in a person into something that is felt to be liked or disliked by her feelings. Something like will be a value that is a tendency attitude that encourages you to do and will even try to defend and fight for it. The attitude contains cognition, feelings, and behavior tendency to act on an object [10]. Cognitive influence positive or negative feelings and feelings affect the tendency to act. Affective-cognitive consistency theory suggests that the affective component of the attitude of the system may be changed by first changing the cognitive component through providing new information [6]. The more information of certain value is functionally positive accepted, the more moral judgment of the value will be.[7]

Individual attitudes toward an object depend on the information obtained from an object is perceived as positive

or negative. Changes in individual cognition of an object will tend to result in changes in feelings and tendencies toward an object. Thus, the rational acceptability of information is considered as a positive or negative will affect the propensity to act on that object. In other words, the acceptance of information from the subject matter in the form of the values that have been analyzed rationally why it needs to be done, what are the benefits, how to do it by the individual concerned will strengthen the tendency to act or attitude towards these values. Decisions of the object to do something or not, maintained or not is determined by the rationality of the acceptability of an object. Decisions on the outcomes of learning as something of value to be done or not, maintained or not is determined by the rationality of acceptance into a value that has been studied as something that is rational or not. If the value that has been received because of thinking rationally, perceived goodness and usefulness in life, done repeatedly over time it will become an ingrained habit. An ingrained habit has become a cultural meaning in life or has become a character in his life. Thus the development of character through the learning process will be formed, when the learning process is done through an activity that makes learners become aware of what the nature of the study, what the values contained therein, where the values need to be emulated, why is the value that needs to be replicated and maintained, practiced in daily life repeatedly.

Routines shape habits, which in turn establish attitudes [10]. Something good is seen to be done, and done repeatedly will become entrenched customs and or internalized in him, so that they feel reluctant and felt there was something missing when abandon and feel the need to preserve and maintain the value [7]. That is something that is obtained from the study of an individual will be a character in itself, if practiced in daily life continuously.

IV. CONCLUSION

The results of this study showed that (1) there are some weaknesses of the application of the scientific approach to developing students' moral-value, i.e the scientific learning approach is only able to develop scientific attitudes of students, while sorts of other attitudes very less embedded into the self. (2) The weakness of the scientific approach can be minimalized by the application of a new model called an integrated scientific moral-values instructional model. The application of the latter model is able to instill the values of attitudes and characters contained in the content of social studies to the student intact. (3) The results of this research showed that the application of the integrated scientific moral-values instructional model on the instructional process of

social studies is able to increase more than 26 % of the instilling the moral- characters compared to the implementation scientific approach contained in the content of social studies to the student intact. It means that the integrative scientific instructional model is very effective to instill moral-character into students' character.

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