PERCEPTIONS OF CERTIFIED TEACHERS ABOUT THE APPLYING SCIENTIFIC APPROACH IN TEACHING PROCESS

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Abstract: The purpose of this study was to determine the perceptions of certification teachers to applying the scientific approach method in the learning process. The method used in study is a qualitative method. Data collection techniques in this study used interviews, observation and documentation. Sources of data in this study are 3 teachers who has been certified. The result of the study show that: (1) Students more active, creative and make the learning process an obligation; (2) The scientific approach many technique, more varied, using many kinds, and (3 make it easier the students for understand. It can be concluded that certified teachers perceptions in applying scientific approach is positive.
Keywords: *Perception, scientific approach*

The world of education, curriculum and teaching are two different things, but closely related to one another. The curriculum is basically a comprehensive plan that includes activities and experiences that need to be provided that provide broad opportunities for students to learn. With this curriculum, in turn, opportunities and possibilities for the learning and teaching process are available, in other words, all teaching and learning process, or learning is always guided by certain curriculum according to the guidance of educational institutions / schools and community needs and other factors.

The connection with the Scientific approach is intended to provide understanding to students in knowing, understanding various materials using a scientific approach, that information can come from anywhere, at any time, not dependent on undirectional information from the teacher.

1. perception

Perception comes from English "perception" which means vision, response, comprehention perception. Perception is the way a person and symptoms according to a process that is selective to a stimulus, a person can have a response or opinion about a particular symptom or object according to Chaplin (2015), “argues that the perception of the word perception means the process of knowing or recognizing objects and event objects with the help of the senses. In contemporary psychology, perception is generally treated as an intervention variable, depending on stimulating factors, ways of learning, devices, mental states or moods and motivational factors”.

This, perceptions of the world by different personalities will also be different, because each individual responds with respect to aspects of a particular situation. Koentjaranigrat (2010:42) “stated that perception is the realization of human bran process and it appears as a view about phenomenon. In this process, many factors such as feeling, needs, motivation, educational background, experiences, etc are involved”. Then the process is followed by a process bhich a persons’s brain arives at meaningful interpretation of stimuli. Hosnan (2014) “The learning objectives using a scientific approach to improve the ability of the intelect aspecially students higher-order,thinking skill, to shape students abilities in problem –solving sistematically, the creation of learning condition in which students fell that learning is a necessity obtain high learning outcomes,to develope students characters”

Positive perception is a personal judgement about certain object positively or as expected about the certain object meanwhile, a negative perception is personal judgement about certain object negatively, not as expected about certain object. Further, (Robbins, 2002:14) “said that positive perception comes from the individual satisfaction about certain object that becomes their perception, the individual knowledge, and the individual experience of the object perceived. Otherwise, negative perception comes from the individual dissatisfaction about certain object that becomes her/his perception, the indivdual ignorant, and the lack experience of the object perceived”.

2. Teacher Certification

Teacher certification is a teacher who has received a certificate, certification based on competencies, academic qualifications, and abilities possessed by the teacher and carrying out a workload of at least 24 hours face to face

per week. In the Law of the Republic of Indonesian number 14 of 2005 concerning Teachers and Lecturers in article 1 point 11, it is stated that certification is the process of giving educator certificates to teachers and lecturers point 12 it is stated, that educator certificates are formal evidence as acknowledgment given to teachers and lecturers as professional staff.

3. Scientific Approach

"Scientific approach is an approach used in the learning process by giving students direct experience through observing, asking questions, gathering information, reasoning and communicating. Scientific approach is defined as the process of finding out information in science, which involves testing the ideas by performing experiments and making decisions based on the result of analysis" (Longman, 2014). It means that the scientific approach is a body of techniques for investigating phenomena, acquiring new knowledge, and correcting and integrating previous knowledge. Tang (2009) in Zaim (2017) "says that the scientific approach has the characteristics of doing science".

Learning with a scientific approach is a learning process that is designed in such a way that students actively construct concepts, laws or principles through stages of observing (to identify or find problems), formulate problems, propose or formulate hypotheses, collect data with various techniques, analyzing data, drawing conclusions and communicating concepts, laws or principles Learning with a scientific approach is a learning process designed in such a way that students actively construct concepts, laws or principles through stages of observing (to identify or find problems), formulating problems, propose or formulate hypotheses, collect data with various techniques, analyze data, draw conclusions and communicate concepts.

Characteristics of learning units are closely related to Graduates' Competency Standards and Content Standards. Competency Standards Graduates provide a conceptual framework about the learning objectives that must be achieved.

Learning with a scientific approach has the following characteristics:

1) Student-centered
2) Involves science process skills in constructing concepts, laws or principles
3) Involve potential cognitive processes in designing the development of the intellect, especially students' high-level thinking skills
4) Can develop the character of students

So, learning using a scientific approach is learning centered on students who develop students' thinking abilities and character. Targets in learning using a scientific approach include developing the domains of attitudes, knowledge, and skills that are elaborated for each education unit.

The purpose of learning with a scientific approach

1) Audience (students) is to address the intended purpose
2) Behavior (behavior) is the ability that must be displayed by students
3) Condition that is what kind of behavior or ability observed
4) Degree is the skills achieved and measured

Some learning objectives with a scientific approach are:

1) To improve the ability of the intellect, especially the ability to think at a higher level of students
2) To shape the ability of students to solve a problem systematically
3) The creation of learning conditions where students feel learning is a necessity.
4) Having high learning outcomes.
5) To train students in communicating ideas, specifically.
6) To develop the character of students

The main objective in learning by using a scientific approach is the influence of students to be more interested in a learning so that it can achieve other goals such as improving student intellect, high learning outcomes and so forth.

Steps of learning by using a scientific approach in the 2013 curriculum includes:

1) Observing

In observing activities give priority to the meaningful learning process (meaningful learning), in line with the opinions above in observing activities of students invited to see, hear, listen and read a material provided by the teacher so that students are able to find facts that have a relationship with the material Observing skills are basic skills that must be possessed by everyone in conducting scientific investigations. The process of observing can be done using the five senses, but does not rule out observations made using tools, such as thermometers, scales or microscopes.

2) Questioning

In learning activities as conveyed in Permendikbud Number 81a of 2013 is asking questions about information that is not understood from what was observed or questions to get additional information about

what was observed (starting from factual questions to hypothetical questions). The competence expected in this activity is to develop creativity, curiosity, the ability to formulate questions to form critical thoughts that are necessary for intelligent life-long learning. So, the questioning activity is arousing curiosity, interest and attention of students about a learning theme to ask questions about what has been seen and read or listened to.

3) Collecting information

The activity "gathering information" is a follow-up to asking. This activity is carried out by exploring and gathering information from various sources through various means. For this reason, students can read more books, pay attention to phenomena or objects more thoroughly or even conduct experiments. From this activity collected a number of information. In Permendikbud Number 81a of 2013, the activity of gathering information is carried out through experiments, reading sources other than textbooks, observing objects / events / interviewing activities with resource persons and so on. As for the expected potential is to develop a conscientious, honest, polite attitude, respecting the opinions of others , the ability to communicate, apply the ability to gather information through various ways that are learned, develop learning habits and lifelong learning.

The application / application of experimental or attempted methods is intended to develop various domains of learning objectives; namely attitudes, skills and knowledge. Principles of Learning with a Scientific Approach.

Some of the principles of a scientific approach to learning activities are as follows:

a) Learning is centered on students
b) Learning forms students' self concept
c) Learning avoids verbalism
d) Learning provides opportunities for students to assimilate, and accommodate concepts, laws and principles
e) Learning encourages an increase in students' thinking skills.
f) Learning increases student motivation and teacher motivation to teach
g) Provide opportunities for students to practice skills and communication.

METHOD

This research uses qualitative research. Moleong (2010)."Qualitative research is a particular tradition in social science that is fundamentally dependent on human observations in their own region and relating to these people". Researcher used qualitative methods because they have the consideration that the first researcher will be easier when dealing with multiple or.

The data source in this study is a certified teachers at SMPN 1 Tojo barat, there are 16 teachers, 3 of whom have been certified. Data sources was taken through observation, interviews with certified teachers about the scientific approach that is applied in schools and documentation.

The type of research used is qualitative research. Then the research was conducted in three ways:

1. Observation

Definition of observation according to Satori & Komariah (2011) "is an observation of an object that is examined either directly or indirectly to obtain data that must be collected in research". Directly involved in the field by involving all the senses. Where as indirectly assisted by mediavisual / audiovisual. Observation is not limited to people, but also other natural objects. Observation techniques are used when research is concerned with human behavior, work processes, natural phenomena, and if the respondent observed is not too large. Observation can be used in quantitative, qualitative and development research. Observations for qualitative research according to Satori and Komariah (2011) "are direct observations of objects to find out the existence of objects, situations, contexts, and their meanings in an effort to collect research data". In quantitative research usually uses structured observation. Whereas in qualitative research, observations that are often carried out are participatory observations, with unstructured observation instruments.

2. Interview

According to Satori & Komariah (2011) "interview is a data collection technique to get information extracted from data sources directly through conversation or question and answer". Sugiyono (2010)"state that explains that interview are used as data collection techniques if researcher want to conduct a preliminary study to find problems that need to be investigated, and also know things from respondents in more depth and the number of respondents is small / few". Data collection techniques are based on self on self-report or self-report, or at least on personal knowledge and or beliefs. Sugiyono (2010)"interviews are divided into structured interviews and unstructured interviews.

3. Document

After getting some data, according to Moleong (2001) ”the next step the researcher should do in this or her research is analyzing data”. According to Strauss and Corbin (Moleong,2001)”the process of data analysis in qualitative research as below that data are broken into discrete parts closely examined compared for similarities and differences, and questions are asked about the phenomena as reflected in the data through this process, one sown and others assumptions about phenomena are questioned or explored lading to new discoveries In other words, analyzing data is the process of arranging raw data in order to make the reader understand it easily”.

It is organizing, arranging in order categories and basic arrangement so that the researcher can find themes and enable to arrange hypothesis of researcher as what the data proposed. According to Sugiyono (2017)”three main components of data analysis. This are data reduction ,data display, and conclusion”.

Findings And Discussion

perception comes from the individual satisfaction about certain object that becomes their perception, the individual knowledge, and the individual experience of the object perceived. Otherwise negative perceptions comes from the individual dissatisfaction about certain object that becomes her/his perception, the indivdual ignorant, and the lack experience of the object perceived”. (Robbins, 2002:14).

1. The Result of Interview

In order to dig information deeply about the data, the researcher also takes an interview, researcher interviewed certification teachers in order to find out whether the certification teachers was able to apply scientific methods in the learning process in the current 2013 curriculum and certification teachers' perceptions about sciencetific method itself.

Perception in this case is a person's view or response in addressing a problem. The scientific approach is one part of learning that must be implemented so that students can actively construct concepts and are able to master the material provided by the teachers. Researcher conducted interviews with three certified teachers is, Islamic religious education (Ag), Teacher of Bahasa Indonesia (SL) and Social Sciences Teacher (SN).

Perceptions according to the three certification teachers were found through interviews as follows:

Question 1:

What do you think when the learning process in the 2013 curriculum uses the scientific approach method?

Teachers Answer:

T1 : Learning is currently in the 2013 curriculum using a scientific approach because it can encourage students to be able to think scientifically, critically and analyze because learning is carried out starting from stages that can inspire students' enthusiasm.

Ag 1 :scientific approach method

It is extraordinary because that is what is required in the current curriculum, but it seems that the current learning process is less effective due to the current COVID-19 condition.

SN1 : As stated by the two teachers, the application of the scientific method in learning is very good, because it can create an independent attitude of students in learning and students become active and creative.

Question 2

What difficulties did you get when applying the scientific method in the learning process?

Teachers Answer :

T2 : In my opinion for my subjects there seems to be no problem, but as I said in the first question because we met face to face are not effective and also the children didn’t attend the class fully according to the time specified according to the schedule. So learning is held directly, but not for an hour, because it will take turns with other subject teachers who are offline as well.

Ag2 : The difficulty seen in the learning process using this scientific method, the teacher must really be able to make students focus on what is being taught, because students tend not to be serious when the learning process begins.

SN2 : Difficulties faced by teachers in using this approach can arise due to lack of preparation.

Question 3

What are the advantages and disadvantages of using a scientific approach in the learning process?

Teachers Answer :

T3 :The advantages and disadvantages are, if according to our experience during this scientific learning

process, it is to make students more creative because the scientific learning process refers to the process that students must do to increase creativity in finding facts in learning while the only drawbacks are the facilities and infrastructure

Ag3 : Its advantages are that it is able to strengthen understanding, memory and the power to transfer things, encourage students to be able to think and work, students are invited to carry out the process of seeking knowledge about hard on their own initiative. deficiency, raises the assumption that there is a readiness of mind to learn for students who are less intelligent, not all students think so that students who are less intelligent will experience many obstacles.

SN3 : The advantage is that it makes students able to think creatively, be active when the learning process starts, the drawback is when students who are less active just sit quietly, listen to what is explained later when asked there is no response, just sit, be quiet and listen.

Question 4

What is the teacher's perception of applying a scientific approach to lessons in each subject?

Teachers Answer :

T4 :think the application of the scientific approach is awesome, my perception as an Indonesian language teacher makes students more active, creative and makes the learning process a must so that students will feel addicted to learning with this scientific approach process.

Ag4 :The scientific approach is a learning approach where the subject matter goes through various activities.

SN4 :The scientific approach provides understanding to students in the learning process to recognize, understand various materials given using this method.

Question 5

Are students interested in participating in classroom learning with the application of a scientific approach?

Teachers Answer

T5 : very interested in the learning process using this method

Ag5 : Of course, students are interested in teaching and learning methods that can awaken students' enthusiasm in teaching and learning activities in the classroom when using the scientific method, it must be adjusted so that they do not get bored..

SN5 : yes, they are interested and happy with the learning process using this method but the current condition of learning is not as effective as usual.

Question 6

Can students conclude the material that has been presented?

Teachers Answer:

T6 :Not all students are able to conclude the material that has been given, only some can, because there are students who are fast in reasoning, some are slow.

Ag6 : There are students who can conclude well there are also those who are slow to receive and process the material in their minds so that they are slow to conclude the material that has been given.

SN6 :depending on the students, some can and some don't, but when asked if they understood, they answered already

Question 7

What are the obstacles and efforts made by the teachers encountered in applying the scientific method in the 2013 curriculum and how to overcome them?

Teacher Answer :

S7 :The obstacle faced by the teacher in applying the scientific approach method during learning is in asking activities, the teacher has difficulty motivating students to want to ask questions about problems.

that students do not understand and the teacher is also overwhelmed. In fostering student motivation to want to express opinions so that learning can take place actively, then to overcome this, the teacher must try in any way so that students can actively ask questions.

Ag7 :The obstacles in the classroom experienced by teachers when applying the scientific approach are in questioning activities, teachers find it difficult to motivate students to want to ask questions about problems that students do not understand and teachers are also overwhelmed in fostering student motivation to want to express opinions so that learning can take place effectively.

The problems in the class experienced by teachers when implementing the approach

scientific is the activity ask, teachers find it difficult to motivate the students to want to ask about issues that have not learners understand and teachers are also overwhelmed in growing motivate students to want to issue an opinion that learning can take place with active.

SN7 : When learning starts as usual, the obstacle when using this method is that students find it difficult to open their mind in order to gain knowledge on their own, most of them still expect the teacher to explain after that they stay silent. shut up and listen so as teachers we encourage, motivate students to pay more attention to what is being explained.

Question 8

Do you apply learning steps in the classroom using a scientific approach?

TeachersAnswer:

T8 :Yes, there are still learning steps that must be used

Ag8 :yes, there must be steps, so that learning can be directed well.

SN8 :must exist, the steps in the learning process must be applied, there should not be none, because the steps are followed

Question 9

Are students enthusiastic about asking about the material being taught?

Teachers Answer :

T9 :depending on the teacher and the way he teaches, in my special lessons, the children are enthusiastic in asking questions and drawing conclusions

Ag9 : sometimes they ask questions when there is learning material they do not understand

SN9 : When there is material or explanation they don't understand, they have to ask, there is a desire for them to ask

Question 10

At the learning process, do you use learning media?

Teachers Answer :

T10 :Obviously there is a medium, depending on each teacher and the material provided, some use infocus, whiteboard or some only use pictures in textbooks

Ag10 : for learning media is often used in the learning process, when needed.

SN10 :the media must be used too. Because if we use learning media such as LCD, children will be more directed to the future

2. Result of observation

a. first observation

The first observation on the 11th of August 2020, researcher followed house-to-house learning (LURING) when the teacher (Mrs SL) carried out in each group in each house that has been determined and used as a place for teaching and learning. There are 13 study groups consisting of 7 to 8 students. Before starting learning the teacher invited students to pray first and then learning begins, but the time for doing offline is limited because they have to do learning in other groups. Even though the time they had during the pandemic was only a little but, the teacher was able to provide material in accordance with the applicable K13 by applying the scientific method.

The students with their enthusiasm for learning asked what they had not understood and summarized the material that had been studied in existing time. In learning, the teacher provides advice, motivation, and questions related to the development of the competence of students' attitudes, character and skills. learning is complete the teacher says closing greetings.

b. second observation

The second observation was carried out on August 14, 2020 for the second certification teacher (Mrs. SN).She is an social Sciences teacher at SMPN 1 Tojo Barat. In accordance with the existing schedule and in accordance with the regulations during the pandemic period (Covid19), which requires students to study at home by forming groups.

The teacher begins learning by praying first after that the teacher asks for the assignment given before and asks for the material they learned before. Even though only through LURING but, learning is still adjusted to lesson plan k13.The teacher begins to stimulate students to be more active and thus dominates the process so that the teacher only corrects the answers. The questions given today are from the teacher and not from books. The teacher dictates the questions and simultaneously tests students' listening skills. Students are very active when there is a question and answer session between the teacher and students, they use the limited time as best they can. The use of media is not optimal either.

c. third observation

The third observation on August 15 2020 on the PAI (Islamic Religious Education) subject in teaching and learning activities gave birth to a human element as a process in order to achieve teaching goals. The teacher sets a learning atmosphere that can make students excited so that when learning begins students do not feel tense with the current Covid 19 pandemic situation.

Learning begins by accustomed to praying first, after that the teachers directs students to discuss the results a group presentation on the material requirements. Scientific method made students continuously fostered by the teacher. The students could be more active and able to master the material provided.

The class in such a short time because learning is not as usual in the classroom and is not effective. The teachers not do the scientific very well, there are the teacher that not understand about scientific approach.

B.Discussion

The purpose of this study is to determine the perceptions of certification teachers about the application of the scientific approach method in the teaching and learning process at SMPN 1 tojo barat.To collect data, researcher used observation, interviews and documentation to certified teachers. The purpose of this study was to determine the perceptions of certification teachers about the application of the scientific approach method in the teaching and learning process at SMPN 1 tojo barat.

Hosnan (2014) "argues that the scientific approach is intended to provide understanding to students in knowing, understanding various materials using a scientific approach, to get information from various sources in finding out, both through observation and other research". An opinion that further emphasizes that the scientific approach to learning is oriented towards scientific work steps in accordance with Sufairoh's (2016) "At the research process the researcher found the same answers from the three certification teachers interviewed, they said that the scientific approach is very well applied in the current 2013 curriculum, because with this method, it makes students more active, creative and makes the learning process as a one needs. A learning approach that emphasizes the activities of students through observing, asking, reasoning, trying, and creating networks for learning activities at school, but when researcher conduct research when the situation is being confronted with Covid 19, the teachers at SMP N 1 Tojo barat said that even though they have entered the 2013 curriculum and applied this scientific method, the current teaching and learning process is not effective, because they only do offline, so their time is very limited.

When researcher observe the learning process that takes place offline the students look so enthusiastic and they are active in constructing the knowledge that is provided, even though learning is only done offline in each group at home, the students are still enthusiastic about receiving the lessons given. The scientific approach is an effort to make students be motivated to learn. Learning in the 2013 Curriculum is different from learning in the Education Unit Level Curriculum. Learning in the 2013 curriculum uses an integrative thematic and scientific approach.

There are 3 certification teachers who were interviewed by the researcher who were willing to be interviewed, the researcher asks questions that are directly related to the scientific method that had been applied in SMP N 1 Tojo barat. This method is applied to all schools, even in every subject.

Researcher interviewed three teachers,they say that the scientific method is student-centered, the teacher only functions as a facilitator, there is a learning syntax which consists of observing-asking-trying-reasoning and communicating, students determine the concept of the environment.

The teacher functions as a motivator, scientific methods can be combined with another methods. The teachers argue that the Scientific approach has advantages including: students are more creative, students can learn independently orin groups, students can explore their own potential, the knowledge obtained by students is more stable and durable. Students think critically, students play an active role in learning, students find their own knowledge, students feel happy because they feel more valued, a democratic atmosphere can be built, teachers are not bored of teaching.

Teachers also acquire new knowledge, students can be more creative, relationships between students can be better, students are more responsible.

CONCLUSIONS AND SUGGESTION

Based on the data findings and discussion of this research, the researcher found that. As explained in the first chapter of this thesis, the purpose of this study is to determine the perceptions of certification teachers about the application of the scientific approach method in the learning process.

The perception of certification teachers that teachers says that students more active, creative and make the learning process

an obligation, scientific approach many technique, more varied, using many kinds, and make it easier the students for understand. In the 2013 curriculum using a scientific approach because this approach is considered appropriate to develop students' attitudes, skills and knowledge, provide understanding to students in the learning process to recognize, understand the various materials provided by using this method in order to make students more active, creative and make the learning process a must so that students will feel addicted to learning with this scientific approach process. Get from the result of the study it can be that certified teachers perceptions in applying sciencitific approach is positive.

for certified teacher, the teacher applies a scientific approach, then the teachermust be creative in making good learning materials. And then, the teacher approaches in the learning process, authentic materials and the approach encourages students to be more creative and active. This can support students in learning. This can affect student happiness in the learning process and the approach method is also enjoyed by students.

for the students, must always be active and creative in the learning process using this scientific method, because the 2013 curriculum is required to be able to master the lessons taught because the teacher is only a facilitator, then students have a more role in capturing the knowledge itself, so that the learning process can run smoothly good.

for the next research the research, the scientific approach can improve students' thinking skills. And then the scientific approach can make students creative, active, interested and enjoying every learning process. This approach is applied in all subjects so that researcher hope that the findings of this study will be used for further research on similar problems.

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