Teacher Competence: The Implementation of Scientific Approach in Civic Education Learning

Muhammad Japar, Dini Nur Fadhillah

Universitas Negeri Jakarta, Jakarta, Indonesia

Keywords: Teacher Competence, Scientific Approach, Civic Education

Abstract: The purpose of this paper is to describe teacher competence to implementation of scientific approach in civic education learning. As we know scientific approach is one of learning method in the learning process that integrates the science skills of finding out the facts and knowledge associated with the learning materials. The method used explorative research that is adapted to the purpose and condition of the actual research. The data collected with competence profile of civic education teachers in applying scientific approach through teacher competence from 30 civic education teachers in Junior High School, DKI Jakarta. The objectives of this study are identified the competence and skill of civic education teacher in civic education learning through scientific approach, developing learning design, subtract the obstacle civic education through scientific approach and process scientific approach. The research shows most of civic education teacher good in teaching through scientific approach. This paper created teacher competency profile in applying scientific approach can use in civic education learning.

1 INTRODUCTION

The Teachers as the front guard in the process of education and learning are at a decisive moment. Teachers are required to have various competencies to support the success of the learning process. The Teacher competence that there are at least four that is professional competence, pedagogic, social and personality. These articles are original reports about civic education teacher competence in implementation of scientific approach in learning process. The curriculum has functions and roles that are very important and strategic. Although not the only major factor in the success of the educational process, the curriculum becomes a guide and direction towards the success of education. The curriculum is a guide for education practitioners-educators, personnel educational-to develop his creativity and abilities within develop and describe various learning materials and tools. Therefore, good educators and education personnel are capable understand the curriculum and implement it in the learning process. Indonesia, they have a regulation about four types of teacher competence (Pahrudin, Martono and Murtini, 2016). Based on the law no.19 of 2005 on national education standards, teacher

competence such as pedagogical, personality, professional and social competence. The research focused on the competence or skill significant a more or less consistent ability to realise the particular sorts of purpose to achieve desired outcomes. Meanwhile, the competence is composed of skills, knowledge, and attitude, but in the different particular the consistent of competence are skills, knowledge, and attitude to the performance of standard required of teacher (Sofo, 1999). In other words teacher competence not only contains knowledge, skills and attitudes, but the important thing is the application of the necessary knowledge, skills, and attitudes in the job. Apparently in other regulation no. 14 of 2005 about teachers and lecturers, the teacher competence expressed pedagogic competence is one of the ability to manage learners. Mention of Department of National education about the teacher competence is one of learning management. This competence shown from the ability to organize the learning program, the ability can be interact or manage the learning process and the ability to make an assessment. Competence of lesson plans.

Based on depdiknas proposed the competence of the preparation of the lesson plan include (1) able to describe the purpose, (2) able to choose the material, (3) able to organize the material, (4) able to determine

the learning method / strategy, (5) / media / learning aids, (6) able to develop assessment tools, (7) able to determine assessment techniques, and (8) able to allocate time. Based on the above description, planning a learning program is a projection of teachers on activities to be done during the learning students, which include: formulating objectives, describing the description of the unit discussed, designing learning activities, choosing various media and learning resources, and planning assessment of mastery goals. Implementing the learning process is the stage of implementation of programs that have been prepared. In this activity, the ability that is demanded is the activeness of teachers to create and grow student learning activities in accordance with the plans that have been prepared. Teachers should be able to make decisions on the basis of appropriate assessments, whether learning activities are adequate, whether the method is changed, whether past activities need to be repeated, when students have not been able to achieve learning objectives. At this stage in addition to the knowledge of learning theory, knowledge of students, skills and learning techniques are needed, for example: teaching principles, the use of teaching aids, the use of teaching methods, and the skills of assessing student learning outcomes. The requirements of ability that must be possessed by teachers in implementing the learning process include the ability: (1) using learning method, instructional media, and training materials according to the lesson objectives, (2) demonstrating the mastery of subjects and equipment teaching, (3) communicating with students, (4) demonstrating various teaching methods, and (5) conducting evaluation in the learning process. The implementation of the learning process regarding the management of learning, in conveying the subject matter should be done in a planned and systematic, so that the purpose of teaching can be mastered by students effectively and efficiently. The capabilities teachers must possess in conducting learning activities are seen in identifying the characteristics and abilities of the students, then diagnosing, assessing and responding to any changes in student behaviour.

As we know Depdiknas suggests the competence of conducting the learning process are including the opening lessons, teacher should present the material, after that using media and methods, and then using props. In the class teacher should have to communicative language, motivate students, organize student's activities, and build the interaction with students communicatively. To end the class teacher should have to summarize lessons, give the feedback, conduct judgments, and use time effectively. Thus, it

can be said that carrying out the learning process is an activity where the on-going relationship between humans, with the aim of helping the development and help the involvement of students in learning. Basically implementing the learning process is to create an environment and atmosphere that can lead to changes in cognitive structure of students. Based on the description pedagogic competence was reflected from the indicators such as the ability to plan the learning program, to carry out the interaction or manage the learning process, and conduct the assessment. The teacher should have remember there are personality competence to shown their ability like steady personality, morality, wise, and authoritative and become the example of learners. This personality competence as a personal competence, the personal ability of a teacher needed to be a good teacher. This personal competence includes personal abilities related to self-understanding, self- acceptance, self-direction, and self-realization. The opinion of the Asian Institute for Teacher Education, raising personal competence includes (1) knowledge of social and religious customs, (2) knowledge of culture and tradition, (3) knowledge of the core of democracy, (4) knowledge of aesthetics, (5) having social appreciation and awareness, (6) having right attitude toward knowledge and work, (7) faithful to human dignity and prestige. The ability of mastery of subject matter widely and deeply. Effective teachers are teachers who are able to bring their students successfully to achieve the goals of teaching. Teaching in front of a class is an embodiment of interaction in the communication process. the teacher's social competence is reflected through the indicators (1) the teacher's interaction with the students, (2) the teacher's interaction with the principal, (3) the teacher's interaction with co-workers, (4) teacher interaction with the student's parents, and (5) . Research focused on the effect of pedagogic competency, personality, professional and social competency teacher to study achievement of economic lesson in state senior high school of east Lombok district academic year 2015/2016. In that research, teacher competence gave effect to economic class but the researcher didn't shown how to teacher give the lesson. And then contribution of competence teacher (pedagogical, personality, professional competence and social) on the performance of learning. As we know the role of teacher competence in Indonesia education. Meanwhile research is teacher's pedagogical and professional competences in CLIL- Based primary school in Indonesia context. Based on that research shown just only focused on pedagogical and

professional competence. Therefore, in this research shown something new because it looks at the teacher competence in implementation learning approach by scientific approach. Then use scientific approach for civic education learning. Why Indonesian students should learn Civic education? As we know, Indonesia has regulation no.20 of 2003 chapter 3 focused on National Education System that national education functions to develop the ability and form the character and civilization of a dignified nation. To be a good citizenship, Indonesian government through education should give civic education to development a potential learners to become a human who believes on God, has a good character, knowledgeable, creative, independent and democratic and responsible citizen. So that's the reason Indonesian people got civic education since in primary school.

(David, 2003) Citizenship or civics education is one of construed broadly to encompass the preparation of the next generation for their roles and responsibilities as citizens and then the role in that preparatory process of education (through schooling, teaching, and learning). Therefore the main orientation of the school should be community development. The improvement of student progressiveness, a scientific approach to learning in civic education is required. Because in this research, focuses of Civic Education on the formation of people who understand and have a good character, good intelligent, good skills and characteristic as practiced through Pancasila and the 1945 Constitution. Scientific approaches usual for scientific research but in this research, teacher competence shows how teacher implementation it in civic education learning. Based on Education ministry Indonesia no.68 of 2013 about the basic framework and curriculum structure in Junior High School, the new curriculum should include scientific approach to make student think high levels. The reality of teachers is still used to a very effective approach to a process that is very effective, fun and challenging as well as for students. Therefore, this research is conducted to describe the implementation, which must be done in the context of Civic Education. Based on (Nurdin, 2015) research is focused on policies in Civic Education to developing national character in Indonesia and then the urgency of Civic Education in Indonesia (Sirajuddin, 2012). That can be implementation of values education on Pancasila and Civic Education subjects (Harisnawati and Vovriyenti, 2016). This research choose Scientific approach to be learning method because it makes learning more active and not boring, after that

students can construct knowledge and skills through the facts found in field investigations for learning. It will be help teacher and student to pursuit the result of learning process. In addition to this scientific-based learning approach, students are encouraged to be more capable of observing, asking, reasoning and communicating or presenting the things learned from natural phenomena or direct experience (kemendikbud,2013:212). The first time scientific method was introduced through the science of education in America in the 19th century, as an emphasis on formalistic laboratory methods leading to scientific facts (Rohandi, 22005).

(Keyes, 2010) wrote about teaching the scientific method in the social sciences. That research focused on the scientific method refers to the top investigative techniques about phenomenon or un phenomenon, new knowledge, and integrate the previous problem to fix it. We can called scientific, the method of search (method of inquiry) and then based on the evidence of observation, empirical, and measurable with specific principles of reasoning. Therefore Scientific methods generally contain a series of gathering activities data through observation or experiment, process information or data, analyse, then formulate, and test the hypothesis. Research about the scientific approach-based cooperative learning tool for Vocational student's vocation program of auto-tronic (Automotive electronic) engineering. That it's shown scientific approach usual to use in science. But, (Keyes, 2010) showed different perspective that is the scientific method in the social science. Implementation of scientific approach based learning shows teacher can designing scientific learning assessment (Wahyono, 2017). The scientific method refers to investigative techniques on some or more phenomena or symptoms, acquires new knowledge, or corrects and integrates prior knowledge. To be scientific, the method of inquiry should be based on the evidence of observable, empirical, and measurable objects with specific principles of reasoning. Therefore, the scientific method generally contains a series of data collection activities through observation or experiment, process information or data, analyse, then formulate, and test the hypothesis. This study uses piglet theory in which learning is related to the formation and development of schemes. The scheme is a mental structure or cognitive structure by which a person intellectually adapts and coordinates the surrounding environment. In the below we can see scientific approach step showed in Figure 1.
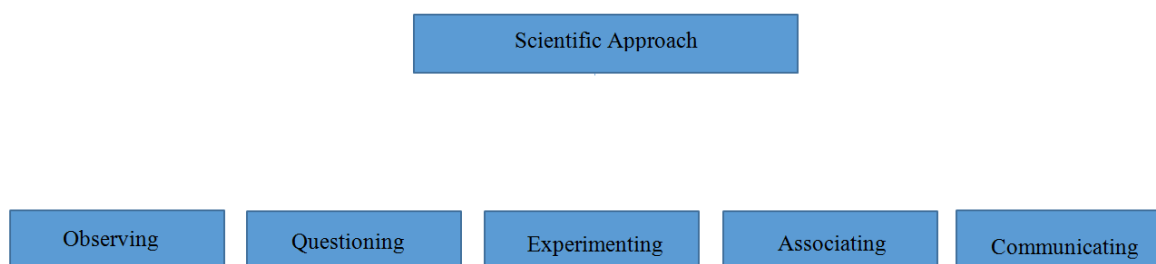
Figure 1: Diagram of scientific approach step (Kemendikbud (2013) and Hosnan (2014).

From Figure 1, there are seven steps in observing process such as determining the object to be observant, determining the purpose, determining the way of observation, limiting the object, doing observation carefully, reporting the results of observation and comprehending the result. After observing, questioning is to raise skills of students in talking, asking question and the other can answer logically. And then questioning useful to encourage students' participation in discussing, arguing, and developing the ability. The last is questioning to think and draw conclusions and to build an attitude of openness to give and receive opinions or ideas. In scientific approach experimenting is important to grouping students into several groups. Asking students to discuss, recording the finding, supervising the learning process to ensure that all learners are actively involved in the discussion and directing the group that need help. Associating process of analysing the information to other information and to find the patterns of interrelationship of the information so that one can make conclusion from the patterns found. The last step of scientific approach is communication. This step to asking the students to read their work in the class. Asking each group to listen well and provide additional input with regard to the work of each group. Communicating giving explanation after the group discussion ended, and structuring tasks and providing opportunities to the students demonstrate attitude, skills and understanding of the substance of learning given.

2 METHOD

The exploratory research itself has the purpose of digging extensively about causes or things that affect the occurrence of something (Arikunto, 2006). So descriptive explorative method is research with problem solving that is explored extensively about causes or things affect the occurrence of something based on the facts that occurred in field. This study observed the civic education teacher in Jakarta. The reason of this paper observed junior high school in Jakarta, because teacher already use scientific approach for students. Teachers observed 30 people. The focus of this research is teacher competence in applying scientific approach in civic education subject. According to (Arikunto, 2006) the meaning of "data source is the subject of which is submitted to the respondent who can be done on a regular basis written or oral of an object, process something and data source from documents or notes of the problem object ". In this research the source data obtained from two sources namely primary data and secondary data. Primary data is data obtained from respondents directly or from first hands which are opinions of a subjective nature of respondents in the form of personal perception but the existing data has not been processed. In research using primary data of researcher using informant has been selected by using, interviewing and related observations with research. The interview will be done to teachers who have been observed and have the best competence. Secondary data is objective data that has been tested and measured usually already processed by a third party and can be found in monographs, data region, the data in the previous research findings that become the reference research, in the form of information or written information related to the object research in the form of records, official archives and documents contains information related to data obtained in the field.
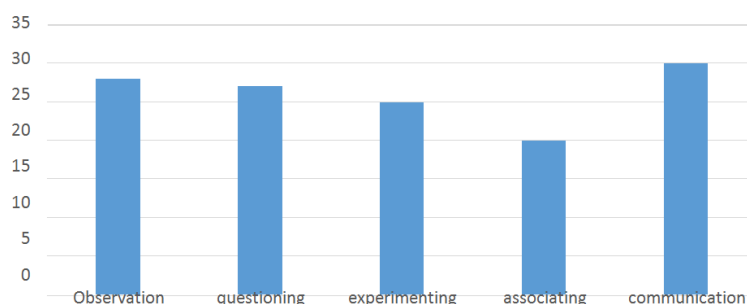
Figure 2: Teacher competence in applying scientific approach.

3 RESULT AND DISCUSSION

Based on the finding in the class teacher one is still not optimal in carrying out the scientific approach, especially in the observing step that is the teacher is still stuck on the old way that start the learning by delivering the material. Then, in the communication step (communicating) the teacher does not do anything when the students do the discussion in the classroom. The second teacher shows deliver the teaching materials well so the students come to observe. The motivation given by the second teacher made the students eager in asking questions. So students are also active in gathering information and invite students to discuss the results of information gathering. Teachers also provide facilities to students to deliver the results of his work. The fourth teacher has another way to applying scientific approach. In the observing step on the students' activities it is said that the students are made a group that should be given the opportunity to observe the things teachers have prepared. In the communication step activities teachers should listen to the things that students submit, provide reinforcement when necessary and guide students in drawing conclusions. The Fifth teacher displaying images / videos / movies related to basic competencies. Invite students to read the material in civic education book. Teachers provide opportunities for students to observe events / symptoms in the family, school, and community.

From the results of observation showed in Figure 2, researchers found 28 of 30 civic education teachers have conducted observation procedures in applying scientific approach. Then 27 of 30 teachers do questioning by providing an opportunity to learners to ask the presented impressions. And 25 of 30 civic education teachers Facilitate learners to explore as much information as possible with questions to find answers using various learning resources. However, facilitating learners to discuss the group by determining the similarity of perceptions to the

essential questions according to the group to be discussed together until the conclusion is still not done teacher civic education. This is because each student has a different reasoning level. Even so the teacher is very good in communicating to students. So students become comfortable in the learning process. Based on interviews with teachers, they found obstacles in applying a scientific approach that the scientific approach should take a long time, the teacher assumes that the application of scientific it takes a long time means it is not easy to manage the limited time to follow the 5 steps of the scientific approach. Lack of teacher creativity in managing learning is also a constraint; it is due to lack of available learning resources in schools. Insufficient facilities and infrastructure such as LCDs are available in every class. This is exacerbated also by the teacher's understanding of the 2013 curriculum that is still low Sources or tools used in the learning process is not sufficient, the ability of students in obtaining information is not the same. Lack of supporting facilities such as: internet network, relevant books, LCD and speakers in the room, it is difficult to stimulate students to be active, media facilities that are less supportive, it costs more.

From the aspect of students sometimes there are student questions that are not in accordance with the basic competencies and indicators that exist, the ability of students in communicating not the same, the lack of early knowledge of students, students who are difficult to work together in the process of learning using scientific approach, for example in forming working groups rely on as well as slow in learning, preparation should be ripe and long. Apart from these obstacles, the teacher argues that in principle the scientific approach is not something new. Teachers are aware of the scientific learning steps they have taken, the difference being that these steps must now be planned in writing. Based on the regulation Education and Culture Ministry in Indonesia no.14 of 2014 learning in secondary education has stipulated that learning activities need to use the following

principles such as the learners are facilitated to find out the object lesson, the learners learn from various learning sources, the learning process uses a scientific approach, Competency-based learning. That regulation seems like the teacher competence of 30 teachers who teach in civic education learning. That integrated learning to give the lessons that emphasize divergent answers that have multidimensional truths. Teacher improved the balance between good communication and active students in the class. After that civic education is learning that prioritizes the culture and empowerment of learners as lifelong learners. This learning was applied values by giving exemplars (ing ngarso sung tulodo), building willingness (ing madyo mangun karso), and developing the creativity of learners in the learning process (tut wuri handayani) such as Ki Hajar Dewantara (The first ministry of Education in Indonesia and founder of Taman Siswa) quotes. These principles must be executed by teachers in the implementation of learning. It's shown through civic education teacher in 30 junior high school in Jakarta. Thus it is expected that learning can take place actively, innovatively, effectively and fun.

The scientific method is highly relevant to the three learning theories of Bruner's theory, Piaget's theory and Vygotsky Theory. Because the theory of learning Bruner is also called the theory of learning about discovery. Bruner's Learning Theory (Carin and Sund, 1975) has four related subjects. First, the individual only learns and develops his mind when he uses his mind. Secondly, by performing cognitive processes in the process of discovery, the student will acquire intellectual sensation and satisfaction which is an intrinsic reward. Third, the way that one can learn the techniques of discovery is that he has the opportunity to make discoveries. And fourth, by making the discovery will strengthen the retention of memory. For that civic education teachers try to apply the scientific approach necessary in learning civic education learning. The scientific approach in learning consists of five steps: observing, asking, gathering information / trying, reasoning / associating, and communicating. The observing description is observing with the senses (reading, listening, listening, seeing, and watching and so on with or without a tool. This observing step for the teacher is a new habit because of the teacher's old habits is to initiate learning by explaining the deductive concept usually starting from the definition. Impressed in the verbalistic presentation. This leads to civic education learning is not fun. At this step observe the teachers and students become active. Master is more active in preparing the material

to be observed; the students more use the senses to observe the learning resources provided by the teacher. This step will build a synergy between learners and teachers because the material to be observed can be prepared in a structured manner by the teachers and learners. Thus the source of learning is no longer concentrated in the teacher but can be obtained from the cooperation of teachers and learners. Teachers and learners can use miscellaneous source of study ar. What should be noted is that if the source is given to the learner to look for it then the teacher should provide the source address so that avoidable negative impacts from online source tracking. Here the ability to choose the source of learning becomes important. The questionnaire description is to create and ask questions, Questions and Answers, discuss about unknown information, additional information you want to know or as a clarification. This step is also not new, which means that ordinary teachers allow students to ask questions, or the teacher asks students early, mid or at the end of the lesson.

Indeed, many teachers complain that students are now lazy to ask, after being examined it turns out the habit of asking in this lesson has not been properly managed. Learning has not stimulated students to ask questions. By asking this step is expected to grow curiosity, high interest in reading and thus students will be diligent to ask the teachers and other students. Teacher will continue to improve his ability because he will face students who are diligent in asking. The ability to ask students can be realized when the learning interaction takes place egalitarian. There is a spirit of mutual respect between teachers and learners. An egalitarian teacher can usually run good communication so that learners will not hesitate to ask questions. In other words educational interaction that takes place in the classroom will improve the ability to ask questions for learners. In this step teachers and learners simultaneously will continue to learn so that the quality of learning will continue to increase. The description of gathering information / trying is to explore, try, discuss, demonstrate, imitate forms / moves, conduct experiments, read sources other than textbooks, collect data from resource persons through questionnaires, interviews, and modify / add / develop. Steps to collect this information have been done in the students do the task independently and structured tasks in each learning. This step finds momentum in the current Internet era. All information is available on the internet so students and teachers are easy to get unlimited learning resources. At the same time teachers can teach students to be able to select and sort out the necessary

information in learning. Description of reasoning / association is to process the collected information, analyse the data in the form of categories, associate or relate the phenomena / related information in order to find a pattern, and conclude. This step builds students' thinking ability to process information that is scattered into information that is easy to understand and useful in learning. The communicating description is to present the report in the form of a chart, diagram, or graph; prepare a written report; and present the report covering the process, results and conclusions orally. This step is an accumulation of the various competencies of writing, reading, speaking, and listening presented with the method of presentation. According to (Carin and Sund, 1975) in the learning process touch the three domains of attitude, knowledge and skills. Scientific-based learning process in the areas of the attitude of being motivated so that students "know why". The skill domain has a "know how" substance. The realm of knowledge has the substance of "know how". The end result is an increase and a balance between the ability to have soft skill and hard skill. Based on data conducted and concept by (Hosnan, 2014), most of teacher shown determining the object to be observed for the student.

4 CONCLUSION

Based on the results of research on the competence of civic education teachers in applying the scientific approach can be drawn conclusion as follows: First, the overall civic education teacher observed has been able to carry out a scientific approach. Scientific learning steps have been implemented in accordance with the conditions of the class, students and each school. It shows the competence of civic education teacher in DKI Jakarta in carrying out scientific approach can be said well. Second, in the two learning steps that observe and communicate there are some teachers who are still in the old mind-set of starting learning with lectures, explaining the definitions and tend to verbalisation. In communicating there are some teachers who consider that the step is entirely the role of the student so as to forget the strengthening of the teacher. Based on the results of the research it can be recommended several things as follows: First, teachers must continue to improve their competence either through training that can be followed or by reading many books related to learning methodology and material books related to the material discussed. In addition it must also improve the capabilities in information technology

that is much needed in this era. Secondly, the principal should continue to build the school as a learning community so that the school creates an atmosphere conducive to learning both for teachers and for students. The principal should hold trainings for teachers so that teachers can continue to improve their competence.

REFERENCES

Arikunto, S. (2006) 'Research procedures a practice approach'. Jakarta: Reneka Cipta.

Carin, A. A. and Sund, R. B. (1975) *Teaching Science trough Discovery*. 3rd Ed. Ohio: Columbus, Ohio : C. E. Merrill Pub. Co.

David, K. (2003) 'Citizenship Education in England: The Making of New Subject', *Journal of Social Science Education*, 2(2), pp. 1–10.

Harisnawati, H. and Vovriyenti, R. (2016) 'Implementation of Values Education on Pancasila and Civic Education Subjects in Elementary School: Study in Kota Padang', in *International Conference on Education for Economics, Business, and Finance*, pp. 288–295.

Hosnan, M. (2014) *Pendekatan Saintifik dan Kontestual Dalam Pembelajaran Abad 21: Kunci Sukses Implementasi Kurikulum 2013*. Bogor: Ghalia Indonesia.

Keyes, G. (2010) 'Teaching the Scientific Method in the Social Sciences', *Journal of Effective Teaching*, 10(2), pp. 18–28.

Nurdin, E. S. (2015) 'The Policies on Civic Education in Developing National Character in Indonesia', *International Education Studies*, 8(8), p. 199.

Pahrudin, P., Martono, T. and Murtini, W. (2016) 'The Effect of Pedagogic Competency, Personality, Professional and Social Competency Teacher to Study Achievement of Economic Lesson in State Senior High School of East Lombok District Academic Year 2015/2016', *In Proceeding of the International Conference on Teacher Training and Education*, 2(2), pp. 332–345.

Rohandi, R. (22005) *Pendidikan Sains yang Humanistik: Memperdayakan Anak melalui PendidikanSains*. Yogyakarta: Kanisius.

Sirajuddin, S. (2012) 'The Urgency of Civic Education at Ptain (State Islamic University) in Indonesia (Evaluative and Methodological Studies)', *International Journal of Humanities and Social Science*, 2(9), pp. 147–151.

Sofo, F. (1999) *Human Resource Development: perspectives, roles and practice choices*. Warriewood, NWS: Business and Professional Publishing.

Wahyono, W. (2017) 'Implementation of Scientific Approach Based Learning to Think High Levels in State Senior High School in Ketapang', *International Journal of Eduaction and Research*, 5(8), pp. 221–231.