

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter presents the result of reviewing of related literature including Curriculum, Curriculum 2013, Scientific Approach, Implementation of Scientific Approach in English instruction and some previous studies related to the topic of this study.

2.1 Curriculum

Etimologically, the curriculum is derived from the latin word, “curriculae”, means the distance of race that must be taken by a runner. In the past, the curriculum was defined as a period of education that must be taken by students to produce a diploma as a runner who had to take a distance of race to reach the finish line (Susilo, 2008). Terminologically, the curriculum has a variety of different interpretations according to the viewpoint of each expert. Based on the studies that have been conducted by many experts, the definition of curriculum can be viewed from two different sides; those are the old view and new view.

The old view is often called as the traditional view, which states that the curriculum is a subject that must be taken by students to produce a diploma. Meanwhile, new view is called modern view, that is the entire organized course, activities, and experience which pupils have under direction of the school, whether in the classroom or not (Hamalik, 2009). Curriculum plays important role in education. It can be said that curriculum is the hearth of education since the

quality of education as well as the outcomes are determined by how well the curriculum is arranged and implemented. According to Pater (1982) curriculum is the plan or program for all experiences which the learner encounters under the direction of the school.

In addition, Kunandar (2011) states that the definition of curriculum is a set of plans and arrangements regarding the purpose, content, and teaching material and methods as a guide of the implementation of learning activities to achieve specific educational goals by Government Regulation Number 19 year 2005 on National Education Standards. Beside that Cahyono and Widiati (2011) state curriculum is a set of plans and arrangements covering educational goals, contents, learning materials and learning methods intended as the guidelines in implementing the teaching and learning process to achieve the goals that have been set. It means that anything related to education system is documented which functioned as guideline for conducting teaching.

From those definitions it can be constructed that curriculum is set of general plans and arrangement of instructional acts covering educational goals, contents, learning materials, and learning methods as well as strategies functioned as the guidelines in teaching for achieving the desired goals.

As some meanings are definitions of the curriculum explained before, basically it has a function as a guide or reference. The functions of curriculum in each of the participant are different, such as teacher, students, principals, supervisors, parent, and community. For teacher, the curriculum should serve as guidance in implementing the learning process. For students, the curriculum

serves as a study guide. For principals and supervisors, curriculum serves as a guideline in conducting supervisors. For parents, the curriculum serves as a guide in guiding children to learn at home. Meanwhile for the community, curriculum serves as a guide to provide assistance for the implementation of the educational process at school (Ruhimat, 2012)

The curriculum change is a process to make something or a condition better. Curriculum change happens with reasons and purposes, to make it more relevant. Curriculum change can answer the demands toward the education that must be able to adjust the evolving dynamics in society.

2.2 The Curriculum 2013

The latest curriculum used by education in Indonesia is Curriculum 2013. Curriculum 2013 focuses on education based on competences and characters. Burke (1995) states competence is a knowledge, skills, and abilities or capabilities that a person achieves. Students are able to perform particular cognitive, affective, and psychomotor behaviors. Mulyasa (2013) states that character in the Curriculum 2013 is a combination between manner or moral and knowledge based on competency standard in every educational unit. He also states that through the Curriculum 2013, students are expected to increase and use their knowledge independently and review character values and attitude to apply in daily behavior.

The Curriculum 2013 uses contextual method based on competences, characters, and lesson which concerns with skills developed by competence approach. There are two theoretical bases which become the reasons of it, those

are individual learning and mastery learning (Kemendikbud, 2013b). In individual learning, students are able to learn by their own way and based on their ability. In mastery learning, students are able to learn all materials with good evaluation based on appropriate learning system. In conclusion, the Curriculum 2013 forces the students to develop their knowledge based on their own potential. The students learn from what they get inside and outside learning process naturally.

2.2.1 Characteristics of the Curriculum 2013

The Curriculum 2013 has some characteristics as stated in the Minister of Education and Culture Decree No. 24/2016. It is stated that the objective of the Curriculum 2013 is to prepare Indonesian people to be devout, productive, creative, innovative, affective, and capable of contributing in social life, national, and world (Kemendikbud, 2016c). To reach the objectives, the designed Curriculum 2013 has several characteristics as mentioned the Minister of Education and Culture Decree No. 59/2014. First, it develops the balance between spiritual aspects, social attitude, knowledge, and skills. Second, school is a part of society that gives planned learning experience. The students apply what they learn at schools to society and use the society as a source of learning. Third, the Curriculum 2013 provides sufficient time to develop students' attitude, knowledge, and skills. Fourth, it develop the competence that is stated in core competence and broke it down into basic competence of each instruction. Fifth, it develop the core competence to become organized elements of basic competences, all of which and learning process are developed to reach core competence. Sixth,

basic competence is developed based on accumulative principle, reinforce, and enrich the subjects of education level (Kemendikbud, 2014b).

The change aspects of the Curriculum 2013 are increasing and balancing soft and hard skills on graduate competency standard which includes attitude, knowledge, and skill competence. The students are also forced to be more active and creative because the material and the process standard of the Curriculum 2013 uses Scientific Approach. This approach includes observing, questioning, associating, experimenting, and communicating as learning activities. The learning evaluation also changes. The previous assessment uses test by measuring knowledge competence based on the result. In the Curriculum 2013, the assessment uses authentic assessment which measures all aspects of competences, namely attitude, knowledge, and skill based on the process and the result during the learning activities.

2.2.2 Scientific Approach

Scientific is something that is related to science. This word is derived from the word “science”. Scientific Approach means method by using science rules. Therefore, scientists who use this approach for their research should use the rules of science. It is also stated in the Online Longman Dictionary (Suharyadi, 2013) that scientific approach is a process in finding out information in science by testing ideas through experimenting and making decisions based on the result. It can be said that this approach can be called as a technique in investigating, observing, gaining, and also integrating the phenomena by previous knowledge.

Generally, this approach is used by scientists in doing a research related to the phenomena of science or natural world. It is used by scientists because of the reliability of this approach for obtaining knowledge. Ary, et al (2002) mentions that scientific approach is used for observing the phenomena and have used it to explain, predict, and control the physical phenomena.

Using scientific approach as method in doing the research means that the researcher should follow the step in order. There are several steps in scientific approach that should be followed. McLelland (2006) explains that some steps in scientific approach are observation, defining question or problem, research (planning, evaluation current evidence), forming a hypothesis, prediction from the hypothesis (deductive reasoning), experimentation (testing the hypothesis), evaluation and analysis, peer review and evaluation, and publication. That step used by the researchers or scientists was usually called as discovery skills.

The steps in scientific approach for conducting research are described by McLelland (2006) as follows.

1. Observation

Observation as a process is discovering something in such a phenomenon. The discovery of a phenomenon will occur because the observer has interest on it. The discovery may even be by change, although the observer is forced to do the observation.

2. Question

The following step after the researcher doing the observation is questioning. Observation will lead to some question that need to be answered. The

aim why the question based on observation need to be answered is respond to human curiosity.

3. Hypothesis

By doing the observation, it will result in formulating scientific questions that are answerable to generate formation of hypothesis. Hypothesis is a process in answering the questions that have been formulated. Hypothesis cannot be developed without the research problem. The development can be done by characterizing the subject of investigation. Hypothesis is generally consistent with existing knowledge and conducive to further inquiry.

4. Experiment

The process of experiment designed to prove or disprove the hypothesis if the prediction is correct, hypothesis will not able to be rejected.

5. Evaluation

Evaluation is important to make sure that the conclusion has been made is not wrong. It is usually done by presenting it in scientific meeting. So, it can be reviewed if there is an incorrect thing inside the research paper. The evaluation process is very important for scientists to make their researches be accurate, innovative, and comprehensive.

Those overall descriptions of the steps are similar to Dyer, et al. (2011) about mastering five skills of influence the innovators but they use different terms for those steps. They state that there are some discovery skills should be followed in order to generate new ideas, associational thinking, questioning, observing, networking, and experimenting.

The steps mentioned above which are used by scientists using Scientific Approach is similar to the process of thinking in every human in generating idea. It is also stated by McLelland (2006) that scientific method is a way of learning process by using critical thinking that will produce creative ideas.

Considering the relevancy and reliability, scientific approach is adopted for teaching and learning activity. Beside, the students' learning outcomes will increase by using this approach. Therefore, the students learning active participation and their knowledge will be improved. It is in line with Suharyadi (2013) that scientific approach is very effective to increase the students' learning outcomes and stimulate them to be actively involved in the teaching and learning activity.

For the entire teaching and learning activity with scientific approach, the terms which are used come from Dyer, et al. in the teaching and learning activity using Scientific Approach. The steps of Scientific Approach for scientific learning are rearranged by considering the three domains in taxonomy for learning by Bloom as the goal of education (Ministry of education, 2014). Those are cognitive, affective, and psychomotor. In the implementation for the teaching and learning activity, those steps are developed based on the needs of learning.

2.3. Scientific Approach in the Curriculum 2013

The Curriculum 2013 is approach implemented in the academic year of 2013/2014 as the revision of KTSP 2006. It is in line with Mulyasa (2013) who stated that the Curriculum 2013 is the development of KTSP 2006. In this case, there are some elements changed in this curriculum but it concerns of four

elements. Poerwati, et al. (2013) also points out that the elements are the standard of content, standard of process, and standard of evaluation. An element that really affects the result of the learners in teaching and learning activity and also the atmosphere toward teachers' and students is standard of process

Ministry of Education and Culture (2013) elaborates that Scientific Approach in the teaching and learning process includes observing, questioning, experimenting or exploring, associating, and communicating and creating for all the subjects. For a certain subject, material, and situation, probably the scientific approach cannot be applied procedurally.

The first step of Scientific Approach is observing. McLelland (2006) says that observing is the first scientific method involving the observation of a phenomenon, event, or problem. Based on this definition, activities conducted in this step are observing and identifying a certain object by using the five senses. Minister of Education and Culture's Decree No 81A /2013 on the curriculum implementation states that in this step the students are able to read, listen, pay attention, or see object (Kemendikbud, 2013a). In this step, Priyana (2014) proposes three teacher's roles, those are (1) teacher assists students to list items to know, to get comprehension, and to produce the target text; (2) teacher provides list of items from which students can select some; (3) teacher makes some items in the input salient. Thus, the teacher is required to facilitate and guide the students in learning activities, while the students actively participate in observing the object provided.

The second step of Scientific Approach is questioning. According to Minister of Education and Culture Decree No 81A/2013 on the curriculum implementation, questioning is done by raising any questions related to the information found in observation to gain additional information (Kemendikbud, 2013a). In accordance to this statement, Priyana (2014) states there are three activities carried out in this step. First, teacher provides opportunity to students to conduct a question-answer. Second, teacher asks students to formulate questions based on their knowledge. Third, teacher encourages students to propose temporary answer based on their knowledge. This step aims to develop the students' creativity, curiosity, and critical thinking.

The next step is experimenting or exploring. Based on McLelland (2006), an experiment is designed to prove or disprove the hypothesis that has been established by researcher. Meanwhile, an experiment in the Curriculum 2013 is conducted by the students to gain an authentic learning result. As stated in the Minister of Education and Culture Decree No 81A/2013 on the curriculum implementation, the aims of experimenting step are to develop the students' skill in implementing their knowledge, gaining information, building learning habit, and understanding long life learning (Kemendikbud, 2013a). In this step, the role of teacher based on Priyana (2014) is providing worksheet and learning resource for the students.

The fourth step of Scientific Approach is associating. The definition of associating according to Daryanto (2014) is a process of thinking logically and systematically about empirical facts which are observable to draw a conclusion.

Associating in learning activities are activities to process the information gained to obtain the conclusion. Minister of Education and Culture's Decree No 81A/2013 on the curriculum implementation states that the students are forced to improve their understanding from learning material, paying attention to the teachers' explanation, reading books, or doing any activities to strengthen the students' understanding (Kemendikbud, 2013a). According to Priyana (2014), the teacher role is to help the students to see pattern, to answer question, and to draw conclusion. It means that the teacher is a facilitator for the students to strengthen their understanding in gaining information.

The last step of Scientific Approach is communicating. Minister of Education and Culture Decree No 81A/2013 on the curriculum Implementation states the students are able to present the result of the products, make a conclusion based on the results of the analysis orally, written, or other media in this step (Kemendikbud, 2013a). The activity that can be conducted by the students in communicating step is presenting their works. Daryanto (2014) mentions that the students are expected to develop their honesty, carefulness, tolerance, ability to think systematically and to express ideas clearly as well as to improve their communicative skills. The teacher has role to give feedback, correction, and enrich the students' knowledge. Priyana (2014) says feedback and correction are the teacher's response to the students' construct of new knowledge.

Based on the above explanation, learning process by using Scientific Approach can be done in a variety of learning activities. The Curriculum 2013 promotes Scientific Approach as the basic approach. As stated by Minister of

Education and Culture Decree No. 22/2016, to strengthen the Scientific Approach, integrated thematic (thematic between the subjects) and thematic (thematic in each subjects) need to apply discovery learning or inquiry learning (Kemendikbud, 2016a). Furthermore, Project-based learning is used to foster the students' ability to produce contextual work, both in individual and group. The same decree also explains the selection of those approaches which is based on the characteristics of the competence, the subject, and the level of education.

2.4 Implementing Scientific Approach in English Instruction.

The Curriculum 2013 has purpose to create independent learners and improve motivation to learn. Regarding to these purposes, in the learning process the lesson plan is designed to develop the students' motivation, interest, curiosity, creativity, initiative, inspiration, autonomy, learning skill, and learning habit. In this context, the government beliefs that Scientific Approach is suitable to be implemented in learning process (Mulyoto, 2013).

Scientific Approach is applied to all levels of studies during the learning process. This approach is also used in all subjects including English (Mulyasa, 2013). The learning process must touch the three competences, namely attitude, skill and knowledge. Attitude relates to the question of "why". Skill refers to the question of "how". In addition, knowledge deals with the question of "what". The Ministry of Educational and Culture (2013) also explains that this curriculum elaborates the steps of developing language teaching and learning activity by using scientific approach as the following:

1. Observing

The activity conducted in this step is the activity which uses the five senses like seeing, hearing, watching, listening and also reading. The thing observed is the material in the form of facts, concepts, and also procedures. The material form of facts like interpersonal or transactional text, special text, functional text, and language feature in the form of text, video, or audio recording. The material in the form of concept can be the material like social function of a certain texts and also the generic structure. The alternative activity in the process of observing can be activity like watching conversation video, watching simple movie, read story book, newspaper, magazine, brochures, leaflets, banner, and poster writing in English.

According to Priyana (2014) in this stage, teacher has some rules, they are:

- a) Assisting students to list items to know to get comprehension and produce the target text.
- b) Providing list of the materials from which students can be select.
- c) Making some materials from the topic

2. Questioning

Questioning is the process of constructing knowledge. It is the concept of asking about social function of a text and the generic structure though group or class discussion. In the process of questioning, students' curiosity and critical thinking should be developed. So that their questions will be highly thinking questions. Questioning also demands the active participation of the students. In order to make questioning activity well conducted and the goal is

achieved, the teacher should prepare questioning guide in the form of the steps which have to be passed by the students.

The Ministry of Education and Culture explain the activities carried out in this stage are:

- a) Providing opportunity to students to conduct question – answer
- b) Asking students to formulate question based on the identified material in observation
- c) Encouraging students to propose temporary answer based on the knowledge

According to Priyana, (2014) the role of the teacher in this stage are the teachers assists students to make questions and teacher provides a number of questions, then the students can start to ask several questions.

3. Experimenting

Experimenting activity is the activity to internalize knowledge and the skill learned by the student. In this process, the students try to express the newly learned knowledge and use language ability in the real world through the activity like simulation, role play, presentation, discussion, and playing game.

The activities carried out in this stage are as follows:

- a) Student collects the fact, and then they can go to communicate.
- b) Students explore and construct experimenting in order to get vocabularies, structure and other language to get the communicating in the context.
- c) Teacher pays attention, gives feedback, or asks the peer's presentation in order to enrich the understanding of the text.

- d) Students communicate the statements orally.
- e) Students write each statement in the students' own notebook.

According to the Ministry of Educational and Culture 2013 the conducted activities are able to be done by conducting role play, simulation, presentation, discussion and playing game. The role of teacher in this stage is providing worksheet and learning resource for students (Priyana, 2014). Worksheet is necessary to help students to explore the material. Learning resource is going to assist students to collect the information to answer their formulated questions.

4. Associating

Associating activity is the process of the developing the ability to classify and compare ideas and phenomena and to be a part of memories. For English, in this step, the students are guided to classify and compare text based on the social function, text structure, and language feature and connect information inter-texts for enrichment to create text. The activities can be role play, writing, and communicating the fact or contextual. The role of the teacher in this stage is to help students to see pattern on material to answer question. Then teacher help student draw conclusion (Priyana, 2014)

5. Communicating

Communicating aims to develop ability to express or present all the knowledge and skill learned. In this activity, not only knowledge and skill will be presented but also the problems and success in the learning process. This activity describes completely students' ability of attitude, knowledge, and skill. The activities that can be conducted in communicating process are presenting

their material or works in front of the class, writing the report, publish their writing wall magazine or social media.

The teacher has role to give feedback and correction, and enrich the knowledge that students construct (Priyana, 2014). Feedback and correction are the teachers' respond to students' construct of new knowledge.

Based on the previous explanation, the writer defines Scientific Approach as the basic conception which forms the background of formulating learning method based on scientific steps.

2.5 Some Previous Studies

Several previous studies have been conducted related to the Curriculum 2013. The first study was conducted by Kurniawan (2015) who described Senior High School English teachers' perception on the implementation and assessment aspects of Curriculum 2013. This research was conducted by interviewing four senior high school English teachers teaching in four different schools. The purpose was to find out senior high school English teachers' perception on the implementation of Curriculum 2013.

Based on the four English teachers' opinion, the implementation of Curriculum 2013 seemed to be in a rush. Teachers were not ready to implement the Scientific Approach and assessment aspects in Curriculum 2013. Although there are training programs on the implementation of Curriculum 2013 facilitated by government, every instructor has different explanation about how to conduct Curriculum 2013, for example in making lesson plan. In terms of the English teachers' perception on the implementation of assessment in Curriculum 2013, it

was found that they had problems to differentiate between cognitive and psychomotor assessment. English skills consist of four, those are reading, writing, speaking, and listening. Teachers are difficult in distinguishing which one should be cognitive or psychomotor assessment. The another problem is the time allocation to implement all the assessment aspects was too short. The time allocation for English lesson in senior high school is only once a week, ninety minutes each. Consequence, teachers did not focus on the material because the assessment aspects were time consuming.

There were some factors which influenced the senior high school English teachers' understanding in implementing Curriculum 2013. The lack of preparation including training program from government and socialization to the teachers about Curriculum 2013 from school became the factors which influenced the senior high school English teachers' knowledge about implementation of Curriculum 2013.

Then, the second previous study was conducted by Haryati (2016). She described the implementation of Scientific Approach for English teaching (A Naturalistic Study of SMAN 1 Magelang). The finding showed that the implementation of Scientific Approach was combined with some methods, like project based learning, problem based learning and task based learning. It was revealed that the teachers successfully applied scientific approach with minimum difficulties. The teachers could apply the steps in Scientific Approach based on the lesson plan that they made.

The present study was different from the two previous one, in term of the focus and the setting. The first study focused on the teachers' perception on the implementation of Curriculum 2013. Meanwhile, the second study focused on the teacher understanding about Scientific Approach. In fact, the present study focused on the implementation of Scientific Approach in English Instruction. Related to the setting, the first and the second previous studies were conducted an senior high school. Meanwhile, the present study was conducted at junior high school.