CHAPTER II

THEORITICAL REVIEW

A. Curriculum 2013

1. Curriculum 2013 in Indonesia

Curriculum 2013 is the new curriculum for Indonesia's education published by Ministry of Education and Culture of Indonesia. The government changes the curriculum based on some reasons, the reasons of changing the curriculum are explained in the following table.

Table 1
Factors causing the changes of the Curriculum in Indonesia

Factors Causing in the Curriculum		
Public Perceptions	**The Development of Science and Pedagogy**	**Existing Negative Phenomena**
Too focus on cognitive aspects. Students' load is too heavy.	Neurology	Fights students
		Drugs
Less charged character.	Psychology	Corruption
		Plagiarism
Less charged character.	Observation based (discovery) learning and collaborative learning.	Cheating in exams
		Social unrest

Adopted from the presentation of the Deputy Minister of Education and Culture of The Republic of Indonesia in Education

There are at least three reasons why the government changes the curriculum in Indonesia. First, public perceptions, this deals with the burden of students who are too focused on cognitive aspects and less focused on character building. Second, the development of science and pedagogy, this relates to students individual abilities that are less noticed.

Third, existing negative phenomena, it focuses on students' moral and psychology which in Kurikulum Tingkat Satuan Pendidikan (KTSP) does not emphasize good character that should be built.

Curriculum 2013 replaces the previous Curriculum, KTSP. Curriculum 2013 expected to be able to create students generation who are ready to face future developments. In KTSP the aspect of graduated competence is emphasize knowledge, while the aspect of graduated competence in Curriculum 2013 is soft skills and hard skills which cover attitude, skill, and knowledge. Means that KTSP uses learning product and Curriculum 2013 uses learning process. Curriculum 2013 focuses on collaboration instead of competition. The emphasis are aimed at encouraging students to be able to observe, ask, reason, and present what they have obtained or know after receiving learning material. According to Mulyasa (2014: 7) Curriculum 2013 more emphasized on character building, especially at the basic level which will be the foundation for the next level.

The essentials of Curriculum 2013 are every subject supports all competencies such as attitude, skill, and knowledge where subject is designed tied one. According to Minister of Education and Culture Regulation number 59 year 2014, curriculum of 2013 is designed with developing a balance between spiritual and social attitudes, knowledge, and skills, and applying them in various situations in the school and community. Here as the curriculum 2013 applied, school automatically

play a part in the community that provides a learning experience so the students are able to apply what is learned in the school to the community and utilize the community as a learning sources.

Director of Basic and Secondary Education Workforce Development Directorate General of Teachers and Education Personnel Ministry of Education and, Bambang Winarji said, in 2018 all schools have implemented the Curriculum 2013, so it is hoped that there will be no more problems regarding the application of different curricula at the same level of education. Related to the statement, along 2015 the government had done some revision in Curriculum 2013. The result from the revision of Curriculum 2013 has already applied in school year 2016/2017. The revision of Curriculum 2013 such as structuring the competence of spiritual attitudes and social attitudes, coherence Core Competence-Basic Competence, and giving creative space for teachers and students (Ministry of Education and Culture 2016).

From the explanation above this could be concluded that the curriculum is a number of education ideas designed by specially authorized institutions to help students achieve the competencies.

2. Characteristics of Curriculum 2013

Curriculum change is common, especially in Indonesia and because the curriculum 2013 is curriculum applied now, this also will bring many changes in its characteristics from the previous Curriculum. So, the point

from the explanation above, the characteristics of curriculum 2013 are developing the competencies expressed in terms of class core competencies which are specified more in basic competence subjects, developing a basic competence based on the accumulative principle, mutually reinforced and enriched between-subjects and education level (horizontal and vertical organizations), and developing class core competence into organizing elements of basic competence. All the basic competencies and learning processes are developed to achieve the competence stated in core competencies. According to Regulation of Education and Culture Ministry of Indonesia number 69 year 2013, Curriculum 2013 is designed with the following characteristics:

a. Develop a balance between developing spiritual attitudes, curiosity, and creativity, collaboration with intellectual and psychomotor abilities.
b. School as a part of the community that provides a planned learning experience where students apply what is learned in school to the community and utilize the community as a learning source.
c. Develop attitudes, knowledge, and skills and apply them in various situations in school and society.
d. Give teachers and students enough free time to develop various attitudes, knowledge, and skills.
e. Competencies are expressed in the form of core competencies which are detailed further in the basic competencies of the subject.

f. Core competencies become organizing elements basic competence, where all basic competencies and learning processes are developed to achieve competencies expressed in core competencies.

g. Basic competence developed based on accumulative principle, reinforced and enriched each subject and education level (horizontal and vertical organizations).

In addition, the principle of teaching learning process in Curriculum 2013 has its own style. Here are the formula of Curriculum 2013 dealing with teaching learning process: a) students are facilitated to look for the material, b) students learn from many sources, c) learning process used is scientific approach, d) learning based competence, e) improving balance, continuity, and the relationship between hard-skill and soft-skill, f) learning process occur in home, school, and society, g) utilization of information and communication technology to improve the efficiency and effectiveness of learning.

3. Scientific Approach in Teaching English

In teaching learning process, teachers have to know what and how they give the knowledge to their students. It means teacher should know what approach to use to transfer knowledge to the students.

In relation to the implementation of Curriculum 2013, scientific approach was being popular when the Ministry of Education and Culture launched the new curriculum that is K13 (Curriculum 2013). In the

implementation of Curriculum 2013 the government stated that the approach which must be used is scientific approach. In learning process in the classroom used is student-centered learning. Teachers can use problem-based learning, project-based learning, discovery learning, and also cooperative and collaborative learning as the method in teaching English class. The aims of using those methods are it can increase students' ability in thinking, processing, developing, attitude, potential, and skill that students have.

Scientific approach is one approach used in learning process with emphasis on the use of data, facts, and students' experiences in teaching and learning activities (Suherman, 2014). This approach will help students in recognizing the problem, formulate problem, find the solution, collecting facts to find the answer, and ultimately draw conclusions and present it orally and also in written.

Scientific approach is used for all subjects, not to mention in English subject. In English subject students not only learn about English but also learn to do many things that is useful for their lives by using English. According to Ministry of Education and Culture in Apriani (2015: 14) scientific approach which has meaning natural based on human characteristic, broadly speaking the process of learning includes, (1) observing and repeating the action actively involving all the senses, (2) asking and questioning new things encountered, (3) trying to do the action independently, (4) building reasoning by comparing the ways,

rules, and strategies used by other or obtained from other sources, (5) performing the new action that have learned and implement in the real life as social function of English itself.

How learning takes place should be scientific-based, meaning that all processes and steps of learning should reflect fixed procedures starting from observing, questioning, experimenting, associating, and networking. The teaching learning process of English by using this approach according to Ministry of Education and Culture no. 65 year 2013 will be explained below:

a. Observing

The process of observing are seeing, listening, reading, and scrutinizing information. Here, teacher gives a chance, train, and facilitates the students to observe the learning material in the form of facts, concepts, or procedures. Students are directly involved in learning. Students can learn based on what they see to construct their knowledge. Teacher does not explain about the material in this stage, only giving several questions to make their observation maximal.

b. Questioning

This activity aims to create students have a critical thinking, logic, and systematic. Teacher has to develop students' curiosity and critical thinking about the material by guides them to set questions and gives helps to the students to answer the questions. It is useful

for the students because it can help students to get the result of the observation well.

c. Exploring

Exploring is quietly useful to enhance students' curiosity in developing creativity and communication skill by collecting the information or data. Collecting the data can be conducted through read books, other learning sources, and teacher explanations. Also in this step, teacher's role are the facilitator and monitor, the teacher give clear and brief instructions followed by examples (simulation or by themselves).

d. Associating

Associating stage is a process for building students' thinking ability and scientific action. The activity can be designed by give chance to the students to relate information that they get from the text they have already studied with similar text found from different sources. The students can show the activity for example, by analyze the text, categorize the text, discussion, conclude, and practice.

e. Networking

This stage lets the students' ability in present their knowledge and skill they have or have not mastered in the form of written and writing improve. This stage also known as collaborative learning, because it is not just a learning technique in the classrooms. In this stage, students will face challenge to learn together. These stages

include verbal communication, oral presentation, publish or show the result.

In the implementation of scientific approach, those stages have to be done. Scientific approach does not only emphasize the result of instruction process, but also focus on the process. Teacher should prepare well all the things that needed to support learning process. In teaching English context, teacher has to create activities to help students comprehend the content of the material given.

4. Types of Learning Model

Regarding the Curriculum 2013 revised edition 2018, there are several methods that can be applied and used in the learning process, where these methods are in accordance with the conditions and characteristics that exist in Curriculum 2013. There are four types of learning activity covered in Curriculum 2013. Below is description of the types of learning model in Curriculum 2013.

a. Problem-based Learning

1) Definition

Problem based learning is learning model that involves students to solve a problem through scientific stages so that they can learn the knowledge while solving the problem (Fathurrohman, 2015: 113). Here, the teachers facilitate the process by putting the students in group, scheduling

presentation, and preparing evaluation forms for the students in order to evaluate themselves.

2) Characteristics of Problem-based Learning

a) Learning begins with a problem (accordance with the real world of students).

b) Give responsibility to students in forming and running their own learning process.

c) Requires demonstrating what has been learned in the form of products or performance.

b. Project-based Learning

1) Definition

Project-based learning is closely related to problem-based learning (learning process is driven by open-ended problem and challenging problems). Project-based learning is learning models that involve projects that students work on are carried out collaboratively, resulting in a product which is then presented. This model is a substitute for the teacher-centered model, which makes students tend to be passive.

2) Characteristics of Project-based learning

According to Klein, et al in Fathurrohman, 2015: 123

a) Leads students to investigate important ideas and questions.

b) Framed around an inquiry process.

c) Differentiated according to students' needs and interests.

d) Driven by students' independent production and presentation rather than teacher delivery of information.

e) Requires the use of creative thinking, critical thinking, and information skills to investigate.

f) Draw conclusions about, and create content.

g) Connects to real world and authentic problems and issues.

c. Discovery Learning

1) Definition

Based on Muhadjir in Fathurrohman, 2015: 104, he equates between discovery, inquiry, and problem solving. While in inquiry learning, the teacher asks questions to students or encourages students to ask open-ended questions, this will provide opportunities for students to direct their own investigations and find answers. Discovery learning believes that is the best for students to discover facts and relationship for themselves. The role of the teacher here is in the form of a facilitator not as a learning resource.

2) Characteristics of Discovery Learning

a) Emphasize the activities of students to find solutions.

b) All student activities are directed to find themselves from a problem so that is expected to foster an attitude of confidence.

c) Develop intellectual abilities as part of mental processes.

d. Cooperative and Collaborative Learning

1) Definition

Both cooperative and collaborative learning has same concept; there are groups to get solutions to a problem that utilizes different knowledge of each individual. The differences between cooperative and collaborative is cooperative learning help students to interact and work together collectively through structured tasks, while collaborative learning more emphasis on using resources and creativity with each other in groups to request information, evaluate ideas, and monitor each other's work.

2) Characteristics of Cooperative and Collaborative Learning

a) Creating a positive dependence between students.

b) Individual accountability that measures mastery of teaching materials for each group member

c) Face to face allows students to be a source of learning for each other.

d) Interpersonal and small group skill (leadership, decision making, trust building, management conflict skill).

Those are learning model that mandate in Curriculum revision 2018. Each learning model is a good learning model because it has been determined based on scientific considerations and uses systematic procedures.

5. Learning Activities

In the implementation of learning, learning activity is very necessary because it holds the key to the success of learning. Actually learning activities are very many, but not all of these methods can be applied in various learning. Rusman in Fadlillah, 2016: 189 said, each learning method has strengths and weaknesses viewed from various angles. Regarding the implementation of the 2013 Curriculum, there are several learning activities that can be applied in senior high school classes. The methods in question are as follows.

a. Jigsaw

Jigsaw teaching techniques can be used in teaching reading, writing, listening, and speaking. In this technique, the teacher pays attention to the background of the student's experience and helps students activate their experience so that the learning activity is more meaningful. Learning using the Jigsaw method requires several members in each group who are responsible for mastering the learning material section and are able to teach the material to the group members. (Arends and Kilcher in Fathurrohman, 2015). Each member from each different team with the same topic met for a discussion (expert team) to help each other related to the topic received. Then, the students return to the original group to explain what they have got.

b. Group Discussion

In the group discussion method, students can interact verbally, exchange information, and argue with each other, and train logical thinking in a group. To apply this method, the teacher must first provide the problem to be discussed and provide guidance on how to solve it. One heterogeneous group consisting of several students determines who will be the chairman, students are given the freedom to speak out their opinions, the teacher monitors and conditions. After that, students submit the results of their discussion, and are discussed and given feedback (Suwarna et al in Fadlillah, 2016: 193).

c. Question and Answer

The teacher provides opportunities for students to ask questions related to the theme of learning and ask other students to answer. This method is intended to determine the extent to which students know the material that has been given, and know the level of mastery of students' thinking. To support the learning process, this method must be accomplished by other learning methods.

d. Role play

The principle of role play is to present the roles that exist in the real world into a role show in the class, then serve as a reflection so that students give assessment. The teacher can make the student cast to do the scenarios that have been studied, while the other students in

a group observe, after that give an assessment and convey their conclusions in front of the class.

e. Snowball Throwing

The snowball throwing method can train students' responsiveness in receiving messages from others and conveying the message to other friends. Learning activities will use rolled paper containing questions, students who get paper balls and then open and answer questions.

f. Cooperative Integrated Reading and Composition (CIRC)

This method is designed to develop the ability to read, write, and other skills, both at the level of higher education and basic (Fathurrohman, 2015: 79). Students not only learn about the explanation of reading and writing, but also know the technique of writing a text. Learning activity using this method students are asked to help each other to show activities for developing voicing reading skills, oral reading, guessing the context of the reading, expressing questions related to reading, and summarizing.

g. Think Pair Share (TPS)

This method is effective for changing the pattern of discussion in the classroom. TPS has a procedure to give students plenty of time to think, answer, and help each other. TPS is divided into three stages, Thinking, the teacher gives questions related to learning and students think of the answers independently; Pairing, students pair

up with other students to discuss what they have thought at an early stage, at this stage students are expected to share answers; Sharing, each pair of students randomly appointed by the teacher to share the results of their thoughts with the whole class about what has been discussed.

B. Industrial Revolution

1. Industrial Revolution 4.0

The fourth Industrial Revolution (4^{th} IR) is the stage in the development of knowledge in which the lines between physical, digital, and biological sphere are being blurred, Schwab in Shahroom and Hussin 2018: 316. Entering 2018, is the age of the industrial revolution 4.0 marked by cyber-physical. Education began to touch the virtual word, such as the use of machine and data. For this situation, the digital physical frameworks of Revolution Industry 4.0 will be very closely related to human life.

This stage of IR changes the way we live, work, and interacts with each other. The community also the environment has to rapidly adapt. They have to be opened and prepared for new strategies and to understand the fact that risk and innovation are unavoidable.

The industrial revolution 4.0 has brought people to flexible mass production technology, machines will coordinate with humans or even independently.

2. Industrial Revolution 4.0 in Education in Indonesia

Industrial revolution 4.0 deals with the result of integration and compounding effects of multiple such as artificial intelligence (AI), biotechnologies and nanomaterial. The most familiar exponential in educational field is the exponential increase in computer power and decreasing cost in storage. When the digital exponential technologies are combined with other similarly rapidly expanding technologies, the combination of multiple exponentially developing technologies compounds and multiplies the pace of change (Penprase, 2018: 215). As a result of joining humans and machines, it will reduce the separation of subjects between the humanities and sociology and in addition to science and innovation.

Revolution industry 4.0 era is a serious tough challenge in the field of education especially for teachers. The 4th industrial revolution is fuelled by counterfeit consciousness and it will change the work environment from assignments based attributes to the human focused qualities, Shahroom and Hussin (2018: 316-317). If the way of educating and teaching learning activities has no change, in the sense that they do not following the developments, the teachers will be impacted in the next few years. With AI, the role of teachers as knowledge providers will be slightly shifted; the role and presence of teachers in the classroom will be increasingly challenging and requires very high creativity. For example, online learning application available on Smartphone there is an online

class option that can replace the role of tutor or teacher in the class, it can be concluded that the process of gaining knowledge or learning can be replaced by the existence of a machine and technology. The application of knowledge in education and learning must be changed better so that Indonesian students are able to outperform the machine and be wise in using the machine.

Based on Nurkamto in public lecture on February 27th 2019 stated that there are three things exist in education system that affected by AI, there are Online learning vs. conventional learning, video conferencing vs. conventional meeting, and E-library vs. library. In the future, there will be many changes in the way teaching and learning. Content of teaching also the role of teachers and students. The logic of the education system must be improved so it the system will suits with students rather than students with the system. This is the point of personalization.

C. 4 Cs

The 21st Century was marked by the era of industrial revolution 4.0 with openness and globalization, which means that human life in the 21st century is experiencing fundamental changes. In the 21st century, people are asked to have quality human resources. The demand asks for various breakthroughs in thinking, conceptualization, and actions, if the challenges are faced with the old paradigm, then all efforts will fail. (Philosopher Khun in Sukartono 2016).

In line with that, Ministry of Education and Culture formulates that the 21st century learning paradigm emphasizes the ability of students to find out information from various sources, formulate problems, think analytically and collaborate in solving problems. In order to realize 21st century skills, the Ministry of Education and Culture applies the Curriculum revised 2018.

The category in the 21st century learning is 4Cs, where 4Cs teach students about mental processes required to adapt and improve upon a modern work environment. Operationally, 4Cs are described in four steps, first, how to think by innovating being critical, and making decisions; second, how to work by communicating with other students and collaborating; third, how to act like local and global citizens; and fourth, media development for 21st century skills such as information technology and digital networks. Here, the explanation of 4 Competencies:

1. Communication

   Communication is an activity of transferring information both in oral or written. However, not many people are able to communicate well, sometimes they are able to disclose information orally but not in written, and vice versa.

   Humans are social beings who always interact with each other. The purpose of communication is to convey the message through a media so that it can be understood by the recipient. In order to make communication between humans being conveyed and interwoven

effectively, appropriate communication techniques are needed. Some techniques for communicating:

a) Clear and not double sentence
b) Speak firmly and not twisted.
c) Understand the other's mind.
d) Convey information in the language of the recipient of the information.
e) Conveying information gently to make it more memorable.
f) Make sure the information is well received.

2. Collaboration

Collaboration is the ability to work together to adapt in a variety of roles and responsibilities, work productively, and respect every difference in perspective.

3. Critical Thinking and Problem Solving

An ability to understand a complex problem, connecting one information with other information, so that a perspective emerges to find a solution to a problem. Critical thinking is also related to the ability to reason, understand information that is complicated, analyze, and solve problems.

4. Creativity and Innovation

An ability to develop, implement and convey new ideas to others, be open and responsive to other new and different perspectives. Creativity depends on one's creative thinking, which is the process of

one's mind in creating new ideas. Creativity in producing new discoveries is often called innovation.

Based on framework P21 (Partnership for 21st Century Learning), there are several competencies and / or skills that students must reach in the Curriculum 2013:

Table 2
Partnership for 21st Century Learning framework

FRAMEWORK 21st CENTURY SKILLS	LEARNING COMPETENCE
Creativity Thinking and Innovation	Students can produce, develop, and implement their ideas creatively both independently and in groups.
Critical Thinking and Problem Solving	Students can identify, analyze, interpret, and evaluate the evidences, arguments, claims, and data that is widely presented through in-depth study, and reflects it in everyday life.
Communication	Students can communicate their ideas and opinions effectively use oral, written, or technology media.
Collaboration	Students can work in group to solve the problem faced.

Because the curriculum currently in force in Indonesia is Curriculum 2013 and must follow an era where it enters the era of Revolution Industry 4.0 which requires integrating 4Cs in the application of learning that can build creativity, a more critical mindset, communication, and cooperation with other students.

D. 4 Cs IN CURRICULUM 2013

21st century skill or termed 4Cs (Communication, Collaboration, Critical Thinking and Problem Solving, and Creativity and Innovation) are real abilities that want to be addressed with the Curriculum 2013. Based on Minister of Education and Culture Regulation No. 23 concerning the latest assessment standards and scoring guidelines, the preparation of lesson plan in accordance with the Curriculum 2013 that must be integrated in, one of them is 21st Century Learning or 4Cs skills. Mastery of 21st century skills is very important, 4Cs are type of soft skill which in the implementation in teaching and learning activities is far more useful than just hard skill.

To complete the P21 framework in accordance with the demands of education in Indonesia, based on the results of a document review on the National Education System Law, Nawacita, and RPJMN (National Medium Term Development Plan) for Basic, Secondary and High Education in Sukartono 2017, two standards were obtained in accordance with Character Education Strengthening in Character Building and Spiritual Value. Overall, the P21 standard in Indonesia was formulated as Indonesian Partnership for 21st Century Skill Standard (IP-21CSS).

1. Critical-Thinking and Problem-Solving Skills – able to think critically, laterally, and systemically, especially in the context of problem solving.
2. Communication and Collaboration Skills – able to communicate and collaborate effectively with various parties.

3. Creativity and Innovation Skills – able to develop their creativity to produce innovative breakthroughs.
4. Information and Communications Technology Literacy – able to access and evaluate information, use and organize information, analyze and produce media, and apply technology effectively.
5. Life and Career Skills: Character building – able to show the behavior of scientific attitude (curiosity, honesty, thoroughness, openness and caution), showing acceptance of the moral values prevailing in society.
6. Life and Career Skills: Spiritual Values – able to live the concept of God through science and internalize spiritual values in everyday life.

The addition of two standards in IP-21 CSS are none other than to support the objectives of the 2013 curriculum, namely character education, so that students possess good mental character.

E. English Foreign Language (EFL) in Indonesia

So far, English has been considered as a second language, but in the rest of the world, English is a foreign language. Even English taught in schools, it does not play an essential role in national or social life. Broughton et al, 2003: 6 said, in Spain, Brazil, and Japan, for example, Spanish, Portuguese and Japanese are the normal medium of communication and instruction: the average citizen does not need English or any other foreign language to live his daily life or even for social or professional advancement.

Learners of English as a foreign language have a choice of language variety to a larger extent than second language learners. The choice of variety is partly influenced by the availability of teachers, partly by geographical location and political influence (Broughton et al, 2003: 7).

In Indonesia, English is only utilized in several fields, such as foreign companies, educational institutions, and foreign offices (Gunantar, 2016: 143). It is hard to find the use of English in daily conversation in Indonesia. English more likely to be taught and learnt only as a foreign language, it means that learning and teaching English occurs mostly in classrooms, rather than during daily communication. Even though with the status as a foreign language, English in Indonesia occasionally used outside the classroom.

F. Previous Study

As the consideration to conduct this research, it is necessary to know the other relevant studies. The researcher has found some studies that review about 21st Century Learning in the education. The first study entitled "Pendidikan dan Tantangan Pembelajaran Berbasis Teknologi Informasi di Era Revolusi Industri 4.0" by Syamsuar and Reflianto. The result of the study said that prepare educators who are able to create innovative learning that can provide opportunities for students to be creative, solve problem, optimize literacy and numeracy skills, collaborate, and think critically are solutions to answer the challenges of education in the industrial era 4.0.

The second research was conducted by Asviangga, Sunardi, and Trapsilasiwi with the title "Analisis Kemampuan 4C's Siswa Dalam Menyelesaikan Soal Matematika Berpikir Tingkat Tinggi". The research problem was wanted to know the 4Cs ability of the students. The result of this research was the students only got three competences that were Collaboration, Communication, and Creativity, this result caused by the teacher never gave items that dug the students' critical thinking.

The third research was conducted by Warli, Arsyad, and Dassa entitled "Evaluasi Proses Pembelajaran Matematika Berorientasi 4C Berdasarkan Kurikulum 2013 di Kelas X SMAN 1 Maros" that used observation as the instrument. The result of this study showed that evaluation result on the planning aspect, the teachers were ready to carry out 4Cs oriented mathematics learning process based on the Curriculum 2013. Critical Thinking, Collaboration, and Communication process tended to be high, while the process of Creativity tended to be low.