

CHAPTER II

REVIEW OF RELATED LITERATURE

2.1 Higher Order Thinking in Bloom Taxonomy

In 1956 Benjamin S. Bloom elaborated a Bloom Taxonomy framework with collaborators Max Englehart, Edward Furst, Walter Hill, and David Krathwohl. According to Anderson, et al., (2001) the objective of this framework is to categorize the teacher's expectations of the student as the goal of the learning process. There are two version of the Bloom's Taxonomy, the original version (1956) and the revised version (2001). In this writing, only the revised version was be discussed.

Remembering, understanding, applying, analyzing, evaluating, and creating are the categories in order. To continue to the next stage, the student is required to pass the previous stage. For example, in order to get to the level of applying the student must first pass the stages of remember and understand. HOTS (Higher Order Thinking Skill) refer to a student's ability to reach the top three stages of the taxonomy which include analyzing, evaluating, and creating. It is due to the reason that HOTS required a more complicated thought process and has previously covered all stages of the cognitive process.

In terms of teaching, Bloom's Taxonomy can be useful for creating questions and activities in order to meet the teacher's expectations of the student and the

objective of learning. If the teacher expects the student just to remember the material presented on the first day, the question might simply be constructed to be a recalling question. And, if the teacher wants to have the students participate in the HOT activity in class, they must set up and prepare the class for the activity of analyzing, evaluating, and creating. Preparation might involve a group discussion about how to solve a problem, a presentation, an interview, a debate, or creative writing. The teacher's questions or instructions are as important in achieving the learning objective. If the question encourages the student to think more critically, the process of thinking can progress to the higher order of thinking.

2.2 Implementation of Scientific Approach in the 2013 Curriculum

The curriculum is a set of plans and arrangements regarding of objectives, content, and learning materials as well as the methods used as guidelines for organizing learning activities to achieve educational goals (Reksoadmojo, 2010). According to Kamiludin & Suryaman (2017) 2013 Curriculum is a replacement for the previous curriculum namely (*KTSP/Kurikulum Tingkat Satuan Pendidikan*) which are implemented in 2006. The hallmark of the *2013 Curriculum* is integrative thematic learning, scientific approach, and authentic assessment. In the 2013 Curriculum, teachers are required to be able to present integrative thematic based learning, use a scientific approach, and use learning method that are in accordance with the 2013 Curriculum.

According to Setiawan (2019) thematic learning is a learning method that emphasizes giving special themes of choice to teach some curricular concepts, the concept of integration of several subjects to teach in Indonesian schools. In

addition, according to Wahyuni (2016) thematic learning is learning based on a theme that is used to associate several subject concepts, in order to make students was more easily understand a concept because it is only based on one theme for several lessons taught. And in the implementation of thematic learning, teachers are required to use a scientific approach.

According to Kristiantari (2015) the scientific approach is approach which in learning focuses more on observing, questioning, reasoning, trying, and forming networks. According to the Ministry of Education and Culture in Artapati & Budiningsih (2018) students may have much better competence, attitudes, skills, and knowledge through a scientific approach. The learning process refers to a scientific approach according to the Ministry of Education and Culture (2016) includes five steps such as observing, asking, collecting data, associating, and communicating. Further explained as follows:

1. Observing, is student activities which identify an object with or without aids through the five senses. Alternative observing activities include observing the environment, observing pictures, tables and graphs of data, analysing maps, reading various information are available in book as well as other sources. The form of learning outcomes from observing activities is that students can identify problems.
2. Asking, is the activity of students expressing what they want to know or asking questions to the teacher, other students or to themselves with the guidance of the teacher. In asking activities, students make questions

individually or in groups. The learning outcomes of the asking activities are students can formulate the problems.

3. Collecting data, is the activities of students searching information as material for analysis and conclusions. Data collection activities can be done by reading books, field observations, experiments, interviews, distributing questionnaires, and others. The result of learning from the activity of collecting data is that students can test hypotheses.
4. Associating, is the activities of students processing data with the help of certain equipment. Student activities in processing data include making tables, graphs, charts, concept maps, calculating. Then, students analyse the data to compare or determine the relationship between the data they have processed and the existing theory so that conclusions can be drawn. The result of learning from reasoning/associating activities is that students can conclude the results of the study from the hypothesis.
5. Communicating, is the activity of students describing and conveying their findings from observing, asking, collecting and processing data, as well as associations addressed to others both orally and in writing in the form of diagrams, charts, pictures, and the like with the help of information and communication technology. The learning outcomes of communicating activities are students being able to formulate and be accountable for proving hypotheses.

Through this approach, students are expected to be more creative, innovative, and more productive, so later they can succeed in facing various problems and

challenges in real life. In addition, teachers are also required to use learning methods are accordance with a scientific approach. Learning methods are systematic procedures or patterns used as guidelines to achieve learning objectives in which there are strategies, techniques, materials, media and learning assessment tools (Afandi, 2013). Mulyasa (2016) also mentioned there are four learning method that can be associated with scientific approaches such as inquiry learning, discovery learning, project-based learning, and problem-based learning. Based on the Regulation of the Minister of Education and Culture Number 65 of 2013 about process standards, the preferred learning method in the implementation of the 2013 Curriculum are inquiry learning, discovery learning, project-based learning, and problem-based learning.

2.2.1 Discovery Learning

Discovery learning also known as constructivist learning is an active learning process where students can attain HOTS to get an in depth understanding of important topics (Castronova, 2022). The three main characteristics of discovery learning are described by Holmes & Hoffman (2000) in Hamid (2019) as exploration and problem solving to develop generalizations knowledge, interest-based activities in which the student determines their sequence and frequency, and activities designed to promote integration of new knowledge into the learner's existing knowledge.

Through exploration and problem-solving students take an active part in creating, integrating, and generalizing knowledge. Instead of passively

acquiring material through repetition, students build broader applications for abilities through activities that stimulate risk-taking, problem solving, and an assessment of unique experiences (Yazidi, 2017). In this method students drive learning process. The expression of this quality of discovery learning completely changes the roles of students and teachers, which is an important transformation that many teachers find the challenges in teaching process (Jusnita & Ismail, 2018). Another feature of discovery learning is that it allows students to learn at the pace that suits them (Castronova, 2022). Some degree of flexibility in sequencing and frequency of learning activities can be achieved through discovery learning (Hamid, 2019). Learning is not a set series of classes and activities. This characteristic significantly helps student to improve their motivation in learning. Moreover, a third feature of discovery learning is that it is founded on the concept of using existing knowledge as a foundation for creating new knowledge (Jusnita & Ismail, 2018). Students can expand their current understanding by increasing what they already know to generate new ideas.

2.2.2 Inquiry Learning

The inquiry learning method is learning activity that emphasizes the development of thinking habits that enable learners to continue the search for knowledge (Sufairoh, 2016). The inquiry learning method is one of several approaches to learning that can motivate students to develop the creative thinking ability (Kadir, et al., 2017). The students' role in this method is to explore and discover their knowledge, while the teachers serve as facilitators

for the students, encouraging appropriateness, and mentoring student-generated exploration in learning. This method provides opportunities to students in the investigation of a problem. As for teachers, inquiry-based learning is a series of processes that move students in finding answers to their curiosity through critical thinking. In other words, students are required to think critically, logically, identify problems and find their own answers by involving the maximum of all abilities. It can improve or develop the abilities they had before. It is important to remember that inquiry-based learning is not a technique or practice alone, but a process that has the potential to increase intellectual engagement and deep understanding of learners (Kadir, et al., 2017).

The inquiry learning model has several types that are tailored to the role of the teacher or tutor. In this learning the teacher takes a role in the process of inquiry. Starting from determining the topic to evaluating. The types of inquiry learning are open inquiry and guided inquiry. Open inquiry is type of learning where teachers place themselves as facilitators during the learning process. Teachers can provide feedback and get involved in helping students if requested. In the learning process, students get the freedom to explore their investigations. There is their own initiative from students in solving a problem faced and finding the answer themselves. Unlike open inquiry, the role of the teacher in guided inquiry starts from determining the theme and topic of the investigation to be discussed.

In addition, teachers also develop questions that was be investigated by students. In this case, the teacher is involved in guiding from the beginning of

the process to the end. Jusnita & Ismail (2018) suggest that learning by inquiry students could develop deeper understandings of concepts and also develop critical thinking skills. According to Sudjana (2020), there are 5 stages taken in developing learning activities based on the inquiry method, they are (1) formulating problems for students to solve, (2) establishing temporary answers or better known as hypotheses, (3) students looking for information, data, facts needed to answer problems or hypotheses, (4) drawing conclusions or generalizations, (5) applying, conclusions or generalizations in new situations. The application of inquiry method also can be done with the help of questions and answers method (Yazidi, 2017).

2.2.3 Problem Based Learning

According to Boud and Feletti (1997) in Waldopo (2012) problem-based learning is a method of curriculum structure that includes providing students with real-world problem that serve as a stimulus for learning. In essence problem-based learning is a learning activity in which students are presented with information in the form of practical problems to solve. In general, problem-based learning can be interpreted as learning activities that are based on certain problems that occur in everyday life. Through the learning process, the problem is found a solution. In this method the task of teachers is to guide students to find problems while also guide students find solutions to overcome these problems. Waldopo (2012) states that problem-based learning involves students to solve a problem through the stages of scientific methods in order to make

students can learn knowledge related to the problem and at the same time have the skills to solve problems.

Based on the previous definition, especially the understanding of problem-based learning activities, several objectives as well as benefits of implementing problem-based learning in learning activities are train students, both individually and in groups so that they are accustomed to learning actively. This active learning is in relation to achieving learning objectives to finding solutions to the problems faced. Because they are required to solve problems, both individually and in groups students was try to actively seek various information. In addition, this method can train students to be able to utilize various learning resources including learning resources based on information and communication technology. Because they are required to solve problems, students and educators was be encouraged to search information from various learning sources. Teachers use various learning resources to find materials to be raised as learning materials. While learners used various learning resources to solve problems that they must solve in the learning process.

Moreover, this method can train students to find solutions to problems faced in everyday life. Because the problems raised in problem-based learning are real problems faced in everyday life, this is certainly a good provision for students to live in society, they were used to overcoming the problems that they face in real life. Same opinion was conveyed by Minandar (2012) in Waldopo (2012) who emphasized that problem-based learning helps students develop their

critical thinking skills to solve the problem solving through direct involvement in real or simulated experiences, students was become independent learners.

2.2.4 Project Based Learning

Project-based learning is approach that allows students to express their opinions on topics of interest, to ask questions, to make predictions, to develop theories, to use different tools, to apply the skills learned in the context of a real and meaningful life, and to solve problems and answer questions in a creative way both in and out of the classroom (Katz & Chard, 2000). Project-based learning entered educational practice at the beginning of the 1980s, and it was heavily influenced by the communicative method. It is now commonly utilized in the teaching of English as a foreign language as an appropriate and effective method (Xiaomei, 2016). Project-based learning has its origins in the progressive approach promoted by John Dewey. He believed that the classroom should be treated as a society, with students being encouraged to take part actively in the learning process.

Papandreou (1994) in Xiaomei (2016) introduces a model that depicts the project work process in six steps in his work entitled *An Application of the Projects Approach to EFL*:

- Step 1: Preparation: During this time, the teacher introduces this subject to the students and invites them to discuss and ask questions about it.
- Step 2: Planning: During this time, the teacher and students decide how to collect and analyse information, and different tasks are assigned.

- Step 3: Research: In this section, students work independently or in groups to collect information from various sources.
- Step 4: Conclusions: Based on their study of the information they have collected; the students make conclusions.
- Step 5: Presentation: Students must present their finished result to the entire class.
- Step 6: Evaluation: In this section, the teacher gives feedback on the students' activities

Therefore, there are various learning methods that can be applied. According to Fatiloro (2015) when dealing with English teaching challenges, teachers need to use various of methods. Pande (2013) believes that using a variety of methods, particularly those that match the method and learning objectives, was help teachers establish an effective teaching process.

2.3 Student Centered Oriented Learning Methods Towards the Transition Period of the *Merdeka* Curriculum

The 2013 Curriculum was refined with innovations launched by the Ministry of Research, Technology and Higher Education of Republic Indonesia. The breakthrough is in the form of *Merdeka* Curriculum and *Merdeka Mengajar* platform. The *Merdeka* Curriculum is designed to catch up on literacy and numeracy. According to Manalu, et al., (2022) the emergence of this *Merdeka* Curriculum is also expected to support the distribution of education in Indonesia with affirmative policies that have been designed by the government for all students

who are in disadvantaged, outermost, and frontier areas (*kawasan 3T: tertinggal, terluar, terdepan*). According to Saleh (2020) freedom of learning defined as being independent in thinking, working, and being able to respect or respond to change. The *Merdeka* Curriculum also does not determine students' abilities and knowledge in terms of class, but also from the attitudes and skills of students in certain fields. Students are given the freedom to be able to develop their interests and talents. In the independent learning curriculum concept, educators and students simultaneously create a more active and productive learning concept in learning activities (Mastuti, et al., 2020).

The *Merdeka* Curriculum is designed to perfect the implementation of the 2013 Curriculum. This is supported by the research results of Wahyuni (2016) that teachers experience difficulties in implementing the 2013 Curriculum in terms of preparing lesson plans, implementing scientific learning, and learning assessment. Then the results of a study from Maladerita, et al., (2021) which explains that the application of the 2013 Curriculum is too complicated in terms of implementation of teaching method. Furthermore, it was confirmed by research from Krissandi & Rusmawan (2019) that the implementation of the 2013 Curriculum was constrained by the government, school facility, teachers' knowledge, parents of students, as well as the students themselves. Because of this, the government made a breakthrough through the *Merdeka* Curriculum. As the results of research from Nyoman, et al., (2020) that the teacher's understanding of the implementation of the *Merdeka* Curriculum is still in the sufficient category, and development is needed.

According to Yazidi (2017) student centred learning is a learning method that focuses on students. Teachers need fulfil their duties as facilitators in learning. Because the teacher is no longer the only source of information owned by students but the teacher is a learning partner (Antika, 2014). Student centred learning is a way to make students more active in the learning process by considering the characteristics of each student. Students are expected to be able to participate actively in every learning activity without getting a lot of information input from the teacher, but by actively exploring other learning resources independently so that a critical thinking process occurs. In student-centred learning, students are accustomed to HOTS. In the application of student-centred learning, students required to have critical thinking. Students are given opportunities and facilities to be used in building their knowledge independently with the aim that students can gain a deep understanding so as to improve the quality of each individual.

As long as student centred method applied by teacher in the *Merdeka* Curriculum has several advantages. Some of these advantages are that the curriculum is teaching-learning activities more independent and the materials more relevant and interactive (Pertiwi, et al., 2022). In the *Merdeka* Curriculum, learning focuses on essential knowledge and the development of students' abilities according to their phase. As at the high school level there are no specialization programs, students determine the subjects of interest, according to their talents and aspirations. For teachers in teaching activities, they can carry out teaching according to an assessment of the level of achievement and development of students. For schools in the implementation of the *Merdeka* Curriculum, authority is given in the

development and management of curriculum and teaching and learning processes that are adapted to the character of the education unit and students. In addition, the material is more relevant and interactive (Priantini, et al., 2022). In this case learning is mostly done through project work and students are given the freedom to actively explore and describe actual issues such as environmental issues, social economy, and so on to develop critical thinking and problem-solving abilities as form of character development and competence of the *Pancasila* student profile.

The implementation of this curriculum is also very supportive of guaranteed teaching hours and teacher professional allowances (Pertiwi, et al., 2022). In addition to supporting teacher professional hour guarantees and allowances in implementing the *Merdeka* Curriculum, it is also supported by the *Merdeka Mengajar* Platform (Priantini, et al., 2022).

2.3.1 *Merdeka Mengajar* Platform

The *Merdeka Curriculum* was developed to improve the quality of Indonesia education system. The *Merdeka* Curriculum can be adapted to the needs and characteristics of students which can make it easier for students to learn without having to feel burdened with learning activities (Priantini, et al., 2022). The implementation of the *Merdeka* Curriculum is supported by the *Merdeka Mengajar* platform. The *Merdeka Mengajar* platform is an application that can be accessed via an android device or website. This application contains teaching tools needed by students and teachers to facilitate the implementation of learning. *Merdeka Mengajar* platform has a vision of creating a collaborative

ecosystem to foster learning effectiveness and a positive work environment (Priantini, et al., 2022). Teachers can use this platform to search teaching materials such as material books, learning videos and other learning resources that are also made by the teacher's organizational team or the private teacher himself.

Through the *Merdeka Mengajar* platform, teachers are assisted and facilitated in finding inspiration, references, literacy and understanding in efforts to implement the *Merdeka* Curriculum. The learning function in the *Merdeka Mengajar* platform is to provide independent training for teachers to be able to obtain quality and credible training materials that can be accessed independently. This platform also helps teachers, and makes it easier for teachers to carry out diagnostic analyses related to literacy and numeracy easily and quickly in order to make learning can be applied according to the level of achievement and development of students (Priantini, et al., 2022).

2.4 Previous Study

The first previous study similar to this research is conducted by Aisyah (2017). Her study is entitled *Challenges in Teaching English Faced by English Teachers at MTsN Taliwang, Indonesia*. This study was carried out to investigate the challenges of English teaching as well as the solutions implemented by the English teachers at MTsN Taliwang. Through interviews, the study captured English teachers' perspectives on facing English teaching challenges in the classroom and the solutions they implemented to address them. A number of challenges occurred, some of which were caused by students, some by teachers, and some by the school's

facilities. Students face difficulties caused by a lack of vocabulary mastery, low concentration, a lack of discipline, boredom, and difficulties in communicating.

Meanwhile, teachers face challenges such as a lack of training, a lack of language proficiency, limited mastery of teaching methods, unfamiliarity with IT, and a lack of professional development. Furthermore, there are facility issues such as insufficient resources and facilities, as well as a time limitation. This study also proposed strategies to solve these problems as well. The efforts are classified into two categories: those made by the school and those made by the English teachers. MTsN Taliwang's addresses include changing attitudes as well as improving resources and facilities. On the other hand, applying various teaching methods and strategies, adjusting students' proficiency level and learning situation, making use of available resources and facilities, providing constructive feedback, searching for appropriate approach or materials, and teachers' self-reflection are the English teachers' efforts in tackling English teaching challenges.

Next recent study which observed teachers' perspectives toward HOTS and its implementation was conducted by Fakhomah & Utami (2018). Their study is about pre-service English teachers' perceptions and difficulties in employing HOTS in 21-century learning. This study involved 5 pre-service teachers from various universities in the Professional Teachers Program. According to the findings, those five teachers have positive opinions of HOTS in their classrooms, although they encountered certain implementation challenges, such as time management and student abilities. The time management refers to the pre-service English teachers who need extra time in teaching HOTS into the EFL classroom. And students'

ability becomes other challenges because each student has different background knowledge. There are some students who are able to solve the problem or HOTS question, while there are also some students who get difficulty to solve HOTS question. Therefore, the teachers have to consider what type of HOTS questions or activity need to be implemented in the classroom.

Another study is from Mursyid & Kurniawati (2019) who investigated teachers' perceptions of HOTS, implementation of HOTS, and constraints in implementing HOTS in the EFL classroom. They discovered that teachers from generation-x are better informed about HOTS than teachers from generation-y because they have more experiences. Teachers from both generations were able to develop comprehensive lesson plans and materials. According to the findings, teachers from both generations are aware to the importance of HOTS and use it in their classrooms in many different of ways. Even though some challenges are still found by teachers in developing HOTS in their classroom because of due to limited knowledge, lack of experience in developing lesson plans, lack of ability in infusing creativity and teachers focused on transferring the knowledge rather than practicing students' thinking skills.

Furthermore, Ginting & Kuswandono (2020) also conducted a study entitled *Challenges Faced by English Teachers: Implementation of Higher Order Thinking Skills (HOTS) in Designing Assignments in East Indonesia*. This study's research question and objective are concerned with the challenges in designing HOTS assignments as perceived by English teachers in East Indonesia. Twenty Senior High School English instructors from Flores Island, East Nusa Tenggara, Indonesia,

took part in the study. The researcher created research instruments such as questionnaires, class observations, Focus Group Discussion (FGD), and interview. To triangulate the data consistency, the data were cross-checked with the results of each instrument. According to the findings of this study, participants had a positive perspective about creating HOTS assignments. However, the participants encountered challenges when implementing it. They were classified as follows: knowledge of teachers, teachers' preparation, and students' limited ability. These findings also showed why English teachers need to build constructive awareness about the significance of HOTS in assignment design in order to improve the quality of the English learning process.

Base on those previous study it can be known that teachers found it difficult to include HOTS in their English classes because English is a foreign language in Indonesia. The main difficulty in performing HOTS was students' lack of language mastery. Students were expected to participate actively in HOTS classrooms. Their difficulty accepting the materials they studied that cause them to be passive during the learning process. As a result of their lack of motivation, they are unable to express their critical thinking and creativity. However, achieving HOTS was provide students with 21st century life skills that was be useful as they face globalization. As a result, teacher knowledge and understanding of HOTS must be expanded, as they play an important part in supporting students develop HOTS.

The similarities between those previous studies and the one that was conducted by the writer were the objectives. Those previous studies also aimed to investigate the English teachers'/facilitators' perception about the implementation of HOTS in

EFL classroom along with the challenges that they faced in implementing HOTS in EFL classroom, starting from the preparation of the teaching-learning activity until the assigning of the learning activity.

The differences between the earlier studies previously conducted by the researcher were that this research identified English teachers' perception about the implementation of HOTS, especially in EFL classrooms of Junior High School, along with the challenges faced by English teachers when implementing HOTS in EFL classrooms. The numbers of respondents involved in this study was 3 English teachers who taught English in different grades. Subject determination in this study was based on deepening the information needed by the researcher and representing sources needed for research. The three English teachers at UPT SMPN 3 Wlingi were the respondents of the interview that was conducted before class observation. They answered 10 questions related to the objectives of this study. The class observation itself was conducted 4 times in 2 weeks of the study. Along with the interview and class observation, the researcher used the lesson plan created by English teachers as a complement in collecting data that were useful for research results. This research worked on qualitative data as the result of the interview and class observation. The findings of this study were analysed using an interactive model proposed by Miles & Huberman (1992), namely data condensation and data display. The researcher also used additional analysis approaches that included open coding, axial coding, and selective coding. The findings of this study provided teachers, curriculum developers, and decision-makers with more information about

the significance of HOTS to the educational system and could be used by teachers to address the challenges when implementing HOTS in EFL classrooms.