THESIS

PROBLEMS ENCOUNTERED BY EFL TEACHERS IN ASSESSING STUDENTS' HIGHER ORDER THINKING SKILLS: A CASE STUDY IN SMK PERTANIAN PEMBANGUNAN NEGERI SEMBAWA

(MASALAH YANG DIHADAPI OLEH GURU BAHASA INGGRIS DALAM MENILAI KETERAMPILAN BERPIKIR TINGKAT TINGGI SISWA: STUDI KASUS DI SMK PERTANIAN PEMBANGUNAN NEGERI SEMBAWA)

Written and Submitted by:

YUNUS
F022191031

POSTGRADUATE PROGRAM
ENGLISH LANGUAGE STUDIES
FACULTY OF CULTURAL SCIENCES
HASANUDDIN UNIVERSITY
MAKASSAR
2021

APPROVAL SHEET (THESIS)

PROBLEMS ENCOUNTERED BY EFL TEACHERS IN ASSESSING STUDENTS' HIGHER ORDER THINKING SKILLS: A CASE STUDY IN SMK PERTANIAN PEMBANGUNAN NEGERI SEMBAWA

Written and Submitted by

YUNUS
F022191031

Has been defended in front of the thesis examination committee which was formed in order to complete the study of the Master Program in English Language Studies Faculty of Cultural Sciences Hasanuddin University On April, 23rd 2021 and is declared to have met the graduation requirements.

Approved by:

Head of
The Supervisory Committee

Dr. Abidin Pammu, Dipl. TESOL, M.A.
NIP. 19601231 198601 1 071

Member of
The Supervisory Committee

Dra. Nasmilah, M. Hum., Ph.D.
NIP. 19631103 198811 2 001

The Head of
English Language Studies Program

Dr. Harlinah Sahib, M. Hum.
NIP. 19621128 198703 2 001

The Dean of
Faculty of Cultural Sciences

Prof. Dr. Akin Duli, M.A.
NIP. 19640716 199103 1

STATEMENT OF AUTHENTICITY

The Undersigned:

Name : YUNUS

Student's number **:** F022191031

Program : English Language Studies

States truthfully that this thesis is originally my work. If it is proven later that some part of this thesis is either plagiarized or the work of others, I am willing to accept any sanctions for my dishonesty.

Makassar, 23 April 2021

YUNUS

ACKNOWLEDGEMENT

Alhamdulillahirabil ‘Alamin, the researcher, expresses his highest gratitude to Allah Subhanahuwata’ala for blessing, love, opportunity, health, and mercy to complete this postgraduate thesis. This postgraduate thesis entitled “Problems Encountered By EFL Teachers In Assessing Students’ Higher Order Thinking Skills: A Case Study in SMK Pertanian Pembangunan Negeri Sembawa” is submitted as the final requirement in accomplishing postgraduate degree at English Language Studies of Faculty of Cultural Sciences, Hasanuddin University, Indonesia.

In arranging this thesis, a lot of people have provided motivation, advice, and support for the researcher. In this valuable chance, the researcher intended to express his gratitude and appreciation to all of them. First, the researcher’s deepest appreciation goes to his beloved mother and wife for the phone call every time to remind me to keep going and never giving up.

Second, the highest appreciation also goes to the Dean of Faculty, **Prof. Dr. Akin Duli, M.A.**, the first Vice Dean of Faculty, **Prof. Dr. Fathu Rahman, M. Hum.**, and the Head of English Language Studies Department, **Dr. Harlinah Sahib, M.Hum.**, as well as all the lectures and staffs in English Language Studies Department.

Third, the researcher presents his sincere appreciation goes to his first and second advisor, **Dr. Abidin Pammu, M.A., Dipl. TESOL** and **Dra. Nasmilah, M.Hum., Ph.D.**, for their supervision, advice, and guidance from the very early stage of this research and giving him an extraordinary experience as well as correction until the completion of this thesis.

Fourth, the researcher greatest appreciation also goes to **Prof. Dr. Hamzah A. Machmoed, Dr. Sukmawaty, M.Hum., M.A., and Dr. Harlinah Sahib, M.Hum.**, as his examiner as well as the head of the English Language Studies department for her advice supervision, and

crucial contribution in the improvement of the result of this postgraduate thesis.

I gratefully thank the principal of SMK Pertanian Pembangunan Negeri Sembawa, Ir. Mattobi'i, M.P., for allowing the researcher to conduct the research there and also to the English teachers in SMK Pertanian Pembangunan Negeri Sembawa as well as the special one the vice principal of curriculum of SMK Pertanian Pembangunan Negeri Sembawa, **Estri Rahajeng, S.TP., M.Sc.**, and also the two English Teacher, **Miss Meggy Ullyah Mirianda and Mrs. Putri Ismayana** for supporting the researcher to get the data of his research. I could never have finished this without your great support.

I am very grateful to have some close friends at the ELS study program, batch 20182 and 20191, who always support me and I cannot be mentioned here one by one. You are always a good listener for every problem I faced, especially when I had to revise this thesis and re-start over and over again. Thank you for being such good friends who always ready to help me, and thank you for the gaming time that we have every time.

Finally, I would like to thank everybody important to the successful realization of this postgraduate thesis. This postgraduate thesis is far from perfection, but it is expected that it will be helpful to not only for the researcher but also for the readers. For this reason, constructive, thoughtful suggestions and critics are welcomed.

Makassar, 23 April 2021

YUNUS

ABSTRACT

YUNUS. *Problems Encountered By EFL Teachers in Assessing Students' Higher Order Thinking Skills: A Case Study in SMK Pertanian Pembangunan Negeri Sembawa Negeri Sembawa.* (Supervised by **Abidin Pammu** and **Nasmilah)**

This study aims to reveal the problems encountered by EFL teachers in assessing students' Higher Order Thinnking Skills (HOTS) and how they solve its problems in assessing student Higher Order Thinking Skills .

This research was descriptive qualitative research which involved EFL teachers in SMK Pertanian Pembangunan Negeri Sembawa, South Sumatera of Indonesia. Data collected through semi-structured interviewed. The research participants were two English teachers and the vice-principal of curriculum in SMK Pertanian Pembangunan Negeri Sembawa. Data were analyzed by the steps of qualitative analysis.

The result show that the participants have a positive perception of designing HOTS assignments. However, the participants also encounter problems in its implementation. They are divided into three categories, namely: problems with teachers' knowledge, problems with teachers' preparation, and problems with students' limited ability. The findings of this study indicate that the low level of HOTS for students is in line with the problems with the limited knowledge and training of HOTS for teachers. While teachers are essential to the implementation of the learning process, all educational institutions have equal responsibility for improving quality education. These findings also provide how these English teachers solve the problems that they face, starting with joining the HOTS training and subject teacher deliberation meeting to enhance their HOTS awareness and to have good preparation to incorporate HOTS into the teaching and learning process, as well as always encouraging students, despite their limited skills, to continue to be enthusiastic about learning English.

Keywords: EFL teachers, Higher Order Thinking Skills (HOTS), Assessment.

ABSTRAK

YUNUS. *Masalah yang Dihadapi oleh Guru Bahasa Inggris di Dalam Menilai Kemampuan Berpikir Tingkat Tinggi Siswa: Studi Kasus di SMK Pertanian Pembangunan Negeri Sembawa* (Dibimbing oleh Abidin Pammu dan Nasmilah)

Penelitian ini bertujuan untuk mengungkap masalah yang dihadapi oleh guru *EFL* dalam menilai HOTS siswa dan bagaimana mereka memecahkan masalah tersebut di dalam menilai kemampuan berpikir tingkat tinggi siswa.

Penelitian ini merupakan penelitian deskriptif yang melibatkan guru di SMK Pertanian Pembangunan Negeri Sembawa, Sumatera Selatan, Indonesia. Data dikumpulkan melalui wawancara semi struktur. Partisipan penelitian adalah dua orang guru bahasa Inggris dan wakil kepala sekolah pada kurikulum SMK Pertanian Pembangunan Negeri Sembawa. Analisis data dilakukan dengan tahapan analisis kualitatif.

Hasil penelitian menunjukkan bahwa peserta memiliki persepsi yang positif dalam mendesain tugas HOTS. Namun, para peserta juga menemui kendala dalam pelaksanaannya. Mereka dibagi menjadi tiga kategori, yaitu: masalah pengetahuan guru, masalah kesiapan guru, dan masalah keterbatasan kemampuan siswa. Temuan penelitian ini menunjukkan bahwa rendahnya HOTS siswa sejalan dengan masalah keterbatasan pengetahuan dan pelatihan HOTS guru. Meskipun guru memegang peranan yang sangat penting dalam pelaksanaan proses pembelajaran, namun semua lembaga pendidikan memiliki tanggung jawab yang sama untuk meningkatkan kualitas pendidikan.Temuan ini juga menjelaskan bagaimana para guru bahasa Inggris ini memecahkan masalah yang mereka hadapi, diawali dengan mengikuti pelatihan HOTS dan Musyawarah Guru Mata Pelajaran untuk meningkatkan pengetahuan HOTS mereka dan memiliki persiapan yang baik untuk mengintegrasikan HOTS ke dalam proses belajar mengajar, serta senantiasa menyemangati siswa, meski dengan kemampuan terbatas yang dimiliki oleh siswa, untuk terus semangat belajar bahasa Inggris.

Kata Kunci: Guru Bahasa Inggris, Kemampuan Berpikir Tingkat Tinggi, Penilaian

TABLE OF CONTENTS

TITLE PAGE i
APPROVAL SHEET ii
STATEMENT OF AUTHENTICITY iii
ACKNOWLEDGEMENTS iv
ABSTRACT vi
ABSTRAK vii
TABLE OF CONTENTS viii
LIST OF TABLE x
LIST OF FIGURES xi
LIST OF APPENDICES xii
CHAPTER I INTRODUCTION 1
A. Background 1
B. Research Questions 7
C. Objectives of the Research 7
D. Significance of the Research 7
E. Scope of the Research 8
CHAPTER II LITERATURE REVIEW 9
A. Previous Related Studies 9
B. Theoretical Discussion 15
1. Higher Order Thinking Skills (HOTS) 15
2. Assessment 19
3. HOTS Based Assessment 22
4. HOTS in Vocational Education 25
C. Conceptual Framework 27
CHAPTER III RESEARCH METHODOLOGY 29
A. Research Design 29
B. Research Setting 30

C. Research Participant..... 30
D. The technique of Data Collection 31
E. Research Instruments 31
F. The technique of Data Analysis 31
CHAPTER IV FINDINGS AND DISCUSSION 33
A. Findings 33
1. Problems with Teachers' Knowledge 33
2. Problems with Teachers' Preparation 38
3. Problems with Students' Limited Ability 41
B. Discussion 45
CHAPTER V CONCLUSION AND SUGGESTIONS 58
A. Conclusion 58
B. Suggestions 59
BIBLIOGRAPHY 61
APPENDICES

LIST OF TABLE

TABLE 1. Techniques of Assessment ……..20

LIST OF FIGURES

FIGURE 1. Conceptual Framework ……..…….……27

FIGURE 2. Outline of Research Procedure ……..…….……..30

LIST OF APPENDICES

APPENDIX 1. Teachers' Interview Guideline

APPENDIX 2. Vice Principal of Curriculum' Interview Guideline

CHAPTER I
INTRODUCTION

A. Background

Instruction for learning in the digital era has abandoned the model of teacher-centred approach. Essentially, four essential things, like character education, literacy culture, 21st-century skills, and Higher Order Thinking Skills (HOTS), should be incorporated into learning in the digital era. Character education can encourage students' good behaviour while literacy can generate students in schools and communities reading habits, increase the awareness of students by reading different kinds of useful content, and help students think critically. Meanwhile, the skills of the 21st century help students to overcome the challenges they face in everyday life, while HOTS enables students to think critically and provide solutions to the problems they face.

The Indonesian government has been fully aware of the key concern of the creation of HOTS for students, and it was included in the revision of the 2013 curriculum. For instance, Mulyasa (2018) explained that curriculum and good learning could optimally improve the potential of students, specifically the HOTS skills of students. Graduates who are autonomous, active, imaginative, inventive, and have character through the formation of knowledge, skills, and attitudes can be seen as the sign.

It is recommended that HOTS-based learning and evaluation be used for quality education. In the industrial revolution 4.0.0, the introduction of

HOTS-based learning and evaluation is required to enhance the quality and competence of graduates to face the digital era. Those competencies are the qualifications that consist of attitudes, knowledge, and skills that refer to national education goals. Other qualifications that must be enhanced are the ability of students in transferring information, evaluating the information, and creating the information in a new context.

Professional teachers significantly affect the standard of graduates. As the key to good learning and to achieve the quality of graduates, the role of skilled teachers in learning is very significant. The teachers who are experienced in creating a successful and productive learning method are skilled. It is possible to build quality students and education through qualified teachers. That is why the quality of learning has become one of the central and local governments' key targets for improving the quality of education, in particular the quality of graduates. From their Higher-Order Thinking Skills, graduate efficiency can be seen.

Developing HOTS-related to learning and evaluation is a program produced by the Ministry of Education and Culture. The goal of this program is to enhance the quality of learning and the quality of graduates. This program was created in 2018 to suit the course of the policy of the Ministry of Education and Culture. Reinforcing character education and incorporating HOTS into the process of teaching and learning is the most critical strategy.

Fundamentally, Higher Order Thinking Skill (HOTS) is a critical thinking process and creative thinking ability. Those abilities constitute both problem-solving skills and decision-making ability on new situations by connecting interconnected information, manipulating and transforming new and old knowledge and experiences critically and creatively. Mohamed et al. (2006) and Newmann (1990), as cited in Heong et al. (2012), elucidated that HOTS demanded the ability to translate, review and explain the meaning of the idea. Overall, a person can be categorized as having High-Order Thinking Skills when he or she can form a new idea from prior knowledge into the new rational concept (Rajandran, 2008, Lewis & Smith, 1993 cited in Heong, Y.M, et al., 2012). In this case, to measure the HOTS requires an instrument and assessment to train students' thinking skills consist of logical, systematic, critical, creative as well as rational.

For students, HOTS is an essential competency in facing a more dynamic life in the future. Therefore, it was appropriate to implement HOTS early in the 2013 curriculum. Learning instruction, referred to as HOTS, allows students to do active learning. Many studies showed that active learning provides opportunities for students to be able to absorb more subject matter, remember, understand for longer, and the most important one that the students can think at a higher level (Widowati, 2014).

Furthermore, HOTS is one of the main elements for a person to be able to solve new problems in the 21st century (Brookhart, 2010; Moseley et al., 2005; Thompson, 2008). HOTS also plays an important role in applying, connecting, or manipulating prior knowledge to effectively solve new problems (Thomas & Thorne, 2009). In the revised Bloom's taxonomy, HOTS is defined as an incision between the three cognitive dimension top levels of capacity (analysis, evaluation, creation) and three-level of knowledge dimension (conceptual, procedural, metacognitive) (Anderson & Krathwohl, 2001, Thompson, 2008). Therefore, HOTS is assessed using tasks, including the analysis, assessment, and development of metacognition or conceptual and procedural information. This implies that it is essential to familiarize students with HOTS activities to help them get ready to solve new problems, acclimatize themselves to a new atmosphere, and make decisions about a specific problem.

However, according to the data showed by *litbang.kemendikbud.go.id* explained that Trends in the International Mathematics and Science Study (TIMSS) and the International Student Assessment Program (PISA) have shown that most high school students in Indonesia continue to perform at less than satisfactory levels, especially in cognitively demanding tasks. The survey results of TIMSS and PISA over the past ten years showed that Indonesian HOTS-related students had inadequate skills. In PISA, for instance, Indonesia was ranked just 71 out of 72 countries in 2012. Indonesia was only ranked 64 out of 72

nations in 2015. Meanwhile, at TIMSS, Indonesia ranked only 40 out of 42 countries in 2011. Indonesia was ranked 45th out of 48 states in 2015. In 2018, particularly for reading ability, Indonesia was only ranked 75 out of 80 countries. This data showed that Indonesian students have inadequate abilities such as writing and receptive abilities, such as comprehension of reading as well as logical thinking and problem-solving abilities. The majority of Indonesian students are still at the skill level of Lower Order Thinking. This implies that the thinking skills of Indonesian students are only at the level of recall, reiteration, and recitation.

To be specific, the results of the researcher's survey at SMK Pertanian Pembangunan Negeri Sembawa in August 2020 also show the same details. The results of the national examinations in three main subjects, namely mathematics, Indonesian and English subject, are linked to the data. For instance, In English subject, the data showed fluctuations over the last four years in the average score. Firstly, in 2016, the average student score was 47.7. Next, the average student score was 35.6 in 2017, and the average student score was 41.3 in 2018, and the last one in 2019 was 39.5. The average student score was 39.5. From this data, it is evident that the HOTS of students need to be systematically taught and evaluated by the English teachers and education unit in the cognitive aspect.

Different issues that specifically influenced the learning process were found concerning the school level assessment. Learning management and evaluation have not been run efficiently. The teachers are still not aware of the value of assessing students concerning HOTS. On the other hand, the potential of human resources as educators is still negligible. This is due to inadequate implementation of HOTS-based learning preparation and evaluation at the school level. This is also reinforced by the understanding of teachers that it is not necessary to grasp the principle of studying and testing HOTS independently.

Studies concerning the measurement of the HOTS of students have become a big problem in a global context. Some of these studies concentrate on revising curriculum related to developing HOTS, evaluating HOTS students directly, while others focus their studies on how science teachers create an evaluation method to evaluate HOTS students. However, if it is not assisted by the teacher's ability to use the method in the teaching and learning process, an instrument cannot be successfully used in learning even though some previous studies have been very effective in proving that the HOTS would be improved by evaluation methods. As such, to provide a solid basis for solving the problems encountered by teachers in assessing the students' HOTS, thorough research is believed to be required.

B. Research Questions

Regarding the background of the research, the research questions are formulated as follow:

1. What are the problems encountered by EFL teachers in assessing students' HOTS in SMK Pertanian Pembangunan Negeri Sembawa?
2. How do these EFL teachers solve the problems in assessing students' HOTS?

C. Objectives of the Research

Referring to the research questions above, the objectives of the research are:

1. To reveal the EFL teachers' problems in assessing students' HOTS in SMK Pertanian Pembangunan Negeri Sembawa.
2. To reveal how these EFL teachers solve the problems in assessing students' HOTS.

D. Significance of the Research

This research is expected to provide a significant contribution to the teaching and learning of English for practical benefits. The significance of the study can be attributed to several aspects that concern the teacher, the researcher, and the institution. With regards to the teacher, this study is expected to strengthen the teachers' professionalism in improving their skill in arranging and implementing language learning assessment based on Higher Order Thinking Skills as required by curriculum development. The researcher may also benefit from this kind of research in making it a

useful reference and guidance in increasing knowledge or making other academic writing of English. For Institution, this study will become an input for teachers and principals in applying of 2013 curriculum specifically on learning and assessment based on Higher Order Thinking Skill. This will be input for stakeholders in carrying out an assessment of the teaching and learning process in the future.

E. Scope of the Research

Since the terms of HOTS must be integrated into teaching and assessment of the revised 2013 curriculum, this study intends to investigate the problems encountered by EFL teachers in assessing students' Higher Order Thinking Skills in vocational high school of agriculture and how they solve the problems in assessing students' Higher-Order Thinking Skills.

CHAPTER II

LITERATURE REVIEW

In this section, some important elements related to the topic discussed in this study are exposed. Those elements are previous related studies, theoretical discussion, and conceptual framework.

A. Previous Related Studies

Since Higher Order Thinking Skills (HOTS) accounts for as one of many important students' ability that can be developed through teaching and learning processes, researchers are constantly seeking for most suitable strategies for development. Considering its high priority in the field of human development especially teaching and learning, there have been emerging studies done into this aspect of human development and capacity. In the last couple of years, research has been documented in looking at HOTS, which has shown tremendous evidence in many contexts of learning.

The first previous study was entitled "Curriculum Change in English Language Curriculum Advocates Higher Order Thinking Skills and Standards-Based Assessments in Malaysian Primary Schools" by Sulaiman, T. et al. (2015). They reviewed curriculum change in the new English language curriculum in which HOTS and standards-based assessment are given due to attention in Malaysian primary schools. The important thing in this study is the point of view of the Standard Based English Language Curriculum (SBELC) not only Improvements in the

knowledge, attitudes, and behaviours but also search for teachers to meet the needs of students to understand language feedback and respond to higher-order cognitive questions. They concluded that the most immediate goal of the SBELC for primary schools was an attempt to reform education to raise student proficiency in English. Also, improvements in the current English language curriculum may be in the content of the curriculum, teaching strategy, and evaluation enable teachers and students to integrate Higher Order Thinking Skills at the basic level of primary education in teaching and learning the English language.

Another important study was entitled “Students’ Perceived Level and Teachers’ Teaching Strategies of Higher Order Thinking Skills: A Study on Higher Educational Institution in Thailand” by Shukla, D., and Dungsungnoen, P. (2016). This study revealed the perceived levels of HOTS among students and the differences between genders. They also tried to find out teaching strategies for developing HOTS practised in Thailand and its connection with professional teacher components such as appointments, educational qualifications, teaching experience, research experience, and workshop training. The research showed that students had shown Higher Order Thinking Skills at a medium level. The professional components of teachers, such as promotion, teaching experience, and qualification, are strongly associated with techniques used to impart higher-order thinking skills.

Also, Shukla, D. and Dungsungnoen, Schulz, H. and FitzPatrick B. (2016) studied “The Teachers’ Understanding of Critical and Higher Order Thinking and What This Means for Their Teaching and Assessments”. 38 teachers in Newfoundland and Labrador of Canada were interviewed. The teachers assumed that for all students, Higher Order Thinking Skills were necessary and tried to teach thinking; however, they were less sure of assessing thinking. The teachers displayed confusion about what Higher Order Thinking entails and felt that they were not well qualified to teach or test Higher Order Thinking.

“Promoting Higher Order Thinking Skills via Teaching Practice” has also been ventured into the Malaysian context by Ganapathy, M. et al., (2017) from Universiti Sains Malaysia. The study explored deeply the current teaching and learning practices used by ESL lecturers, the types of ICT used in their classes, their views on the integration of these skills into the curriculum, and the application methods of teaching and learning using ICT to promote HOTS. The findings of this study show that in their lectures, lecturers also used HOTS practices. Most of the lecturers teaching English majors (72.5 per cent) agreed that typical HOT activities in their classes are high-level questions and ideas in their academic learning sense.

Related to raising scores with Higher Order Thinking, Zohara, A. and Agmonb, V.A. (2017) conducted a study entitle “Raising test scores vs teaching higher-order thinking (HOT): senior science teachers’ views on

How several concurrent policies affect classroom practices". The goal of this study was to investigate how senior science teachers perceived the effects of a policy of Raising Test Scores and its implementation on Higher Order Thinking (HOT) instruction and on teaching students with low academic achievements to think. The research background was carried out in the light of three parallel policies that advocate: (a) raising test scores; (b) strengthening the thinking and inquiry skills of students; and (c) narrowing gaps in achievement. Twenty interviews with senior science teachers were focused on data collection. The results show that under the high stakes testing regime, the hopes of the senior teachers about a 'new spirit' calling for inquiry instruction and HOT in the system did not materialize. Test training involved intensive interaction with HOT assignments. However, HOT instruction seemed to take the form of 'mechanical instruction' under the scheme of high stakes testing, suggesting rote learning and drilling students to respond to HOT objects rather than teaching meaningful thought. The study concluded that the objective of teaching students to think, as well as the more specific objective of teaching low-achieving students to think, was substantially undermined during an ambitious strategy addressing the need to increase test scores.

The finding is in line with the findings of other researchers (Zuraina 2009, Razak & Lee 2012). This study also found that lecturers prefer students to find answers for assigned tasks as they promote more HOTS,

Brainstorming and problem-solving activities were also commonly used by English lecturers. Furthermore, Most of the lecturers surveyed in this study mentioned that a wide range of ICT tools are used in their lectures in the university, which help promote the development of students' HOTS. The study concluded that lecturers have to face the challenges of utilizing HOTS in their teaching to promote optimum learning for students. However, Learning HOTS through ICT has a very significant effect on improving positive learning outcomes due to the various benefits it brings to the table.

Another important study concerns the "Assessment of Higher-Order Thinking Skills Required for Intercultural Learning", which was carried out by Toyoda, E. (2018) from the University of Melbourne, Australia. The study then discussed in detail successful and unsuccessful cases of Higher-Order Thinking improvement. The findings indicated that, although with some expectations, a suitable learning environment improves HOTS. The study concluded that there are other factors involved in the evaluation of intercultural competence in language learning that may include traditional linguistic and sociolinguistic knowledge assessment. Nevertheless, not all assessments can be performed using the "target" terminology.

Retnawati, H., et al. (2018) carried out a study about "Teachers' Knowledge about Higher-Order Thinking Skills and Its Learning Strategy". The study showed that the awareness of teachers about HOTS, their

ability to develop HOTS for students, solve HOTS-based problems, and calculate HOTS for students is still poor. However, those are real that teachers already recognize the importance of HOTS and teach it by using different creative models of learning. Specifically, Rosaini, R. et al. (2018) carried out the study of “Mathematics Teacher Supporting Higher Order Thinking Skills of Students through Assessment as Learning in Instructional Model”. The study found that after the introduction of Assessment as Learning (AaL) into the teaching model, an enhancement was found, and the teachers succeeded in using a portfolio for learners to promote HOTS in mathematics learning.

Related to environmental learning, Ichsan, I. Z. et al. (2019) conducted a study entitled “HOTS-AEP: Higher Order Thinking Skills from Elementary to Master Students in Environmental Learning”. This research was descriptive. This study was conducted with instruments that are distributed to students. This research aimed to calculate the HOTS of students using HOT-AEP at different levels of education. This study concludes that HOTS students et al. l stages of education are still in the very low tier. Increasing HOTS learners, different ways must be done so that they can increase. HOTS of students may be improved by the creation and use of different learning styles, learning strategies, learning resources, instructional materials, student worksheets, and learning media.

The last previous study is “The Analysis of Higher-Order Thinking Skills in English Reading Comprehension Tests in Malaysia”, which was

carried out by Singh, VKR & Shaari, HA. (2019). the study identified the use of HOTS items in selected English reading comprehension examinations for standard six students in Malaysia. The findings indicated that to meet the HOTS standard that has become part of the current curriculum and national education, most reading comprehension questions in the English exam papers require further revision.

Generally, most of the previous studies above discussed how to incorporate HOTS in the curriculum, teachers' learning strategy, and how to promote students' HOTS. However, it seems just fewer studies focus specifically on problems encountered by EFL teachers in assessing students' HOTS at vocational school. So, this present study focused on investigating the problems encountered by EFL teachers in assessing students' HOTS.

B. Theoretical Discussion

1. Higher Order Thinking Skills (HOTS)

The HOTS literature has remarkable value addition when Bloom's (1956) taxonomy came with three domains as cognitive, affective, and psychomotor. It introduced the Higher Order Thinking Skills which have five levels of thinking such as remember, understand, apply, analyze and evaluate though this taxonomy got revised by Anderson and Krathwohl (2001) with the addition of one more level with creating. Marzano and Kendal (2007) have given new taxonomy to explore complex thinking. They introduced various new domains and related each level of difficulty.

with their respective process, retrieval, comprehension, analysis, knowledge utilization, metacognition, self-study thinking, where the difficulty is depicted from a lower to a higher level.

According to Resnick (1987), Higher Order Thinking Skills is a complex thought process in describing the material, making conclusions, building representations, analyzing, and building relationships by involving the most basic mental activities. These skills are also used to underline various high-order processes according to Bloom's taxonomic ladder. According to Bloom, skills are divided into two parts. First are low-level skills that are important in the learning process, namely remembering, understanding, and applying, and the second are those classified into higher-level thinking skills in the form of analyzing, evaluating, and creating. These high-level of thinking become the concern that must be enhanced by the teachers in the teaching and learning process.

Moreover, Iskandar (in Winarso, 2014) stated that HOTS is the ability to process a piece of information obtained by involving creative and critical thinking processes in the cognitive realm (analysis, evaluation, and creativity), as well as in dealing with certain situations or problems that require completion. Higher Order Thinking Skills that are expected in the learning process are the ability to analyze and solve problems through discussion. Yousef (2016) stated that "Educators consider HOTS as high order thinking that occurs when the student obtains new knowledge and stores it in his memory, then this knowledge is correlated, organized, or

they were evaluated to achieve a specific purpose. These skills have to include sub-skills such as analysis, synthesis, and evaluation, which are the highest levels in Bloom's cognitive taxonomy ".

Higher Order Thinking Skills (HOTS) requires that the students do something based on facts and make connections between those facts. This is in line with the explanation from Thomas & Thorne (2009). They explained that HOTS is a way of thinking that is not just memorizing and explaining facts or applying rules, formulas and procedures, but also making connections between the facts, classifying them, manipulating them, placing them in context or in a different way. Meanwhile, Onosko & Newman (1994) stated that HOTS means "non-algorithmic", and it is defined as the potential use of the mind to face new challenges. New here means an application that students have never thought of before. Higher Order Thinking Skills is understood as the ability of students to be able to connect the learning with other elements beyond what has been taught by the teacher (Brookhart, 2010).

Furthermore, Brookhart (2010) explained HOTS in three categories, namely HOTS as transfer, critical thinking, and problem-solving. HOTS as the transfer is defined as an ability to apply knowledge and skills that have been developed in learning into new contexts. HOTS as a transfer includes an ability in analyzing, evaluating, and creating. Two of the most significant educational priorities are to encourage retention and to encourage transition (which implies meaningful learning when it happens).

Retention allows students to remember what they have learned, while transition requires students not only to remember but also to make sense of what they have learned and be able to use it. The educational aim behind all of the cognitive taxonomies is to empower students with the ability to pass. "Being able to think" means that the knowledge and skills they developed during their learning can be applied to new contexts by students. "New" here means practice or exercise not previously thought by the student, and it is not necessarily something universally new." Higher-Order Thinking is conceived as learners can link their learning to elements other than those they have been taught to associate with it.

HOTS as critical thinking is defined as an ability to give wise judgments and criticizing something using logical and scientific reasons. Critical Thinking is reasonable, reflective thinking that is focused on deciding what to believe or do. (Norris & Ennis, 1989, p. 3). Barahal (2008), who describes critical thinking as "artful thinking," is another example of this group (p. 299), which involves reasoning, challenging and researching, examining and explaining, comparing and relating, seeking uncertainty, and exploring points of view.

HOTS as solving problems defined as an ability to identify and solve the problem using a nonautomatic strategy. If the student wishes to accomplish a particular result or goal, a student incurs a problem but does not immediately know the correct direction or solution to be used to achieve it. How to achieve the desired target is the issue to solve. Since

the students do not know the proper way to accomplish the desired goal immediately, and they must use one or more processes of Higher Order Thinking Skills. These forms of reasoning are called problem-solving. (2007, Nitko & Brookhart, p. 215).

2. Assessment

In general, assessment can be defined as a process to obtain information which used as a basis for decision-making about students, curriculum, learning programs, and educational policy (Nitko, 1996). Moreover, Linn and Grounlund (1995) stated that assessment is a general term that includes procedures used to obtain information about student learning. Furthermore, Popham (1995) argued that assessment in learning is a formal process of gathering information related to learning variables as a teacher's reference in decision making to improve learning processes and outcomes. Meanwhile, Athanasou and Lamprianou (2002) stated that assessment is the process of collecting and combining information from tasks with a view to making a judgment about a person or a comparison against an established criterion. In line with the definition was stated by Athanasou and Lamprianou, in 1981 Anderson, Ball, and Murphy also stated their definition of assessment. They claimed that it is a process of gathering data and making it into interpretable form; then, an assessment can be made based on this assessment.

According to Permendikbud No. 23 of 2016, assessment is the process of collecting and processing information to measure the

achievement of students' learning outcomes. This process is carried out through various assessment techniques, uses various instruments, and comes from various sources. Assessments must be carried out effectively. Therefore, the collection of information that will be used to measure the achievement of student learning outcomes must be complete and accurate.

In the Indonesian curriculum context, learning assessment in 2013 Curriculum is a learning process assessment for improvement or correction. There are various techniques of assessments that are correlated with the 2013 Curriculum in the English subject. Those techniques should cover the four competencies in the curriculum: spiritual competence, social competence, knowledge competence, and skill competence. Sani (2014:204-252) proposed some techniques of assessment. Table 1 shows their distribution.

Table 1. Techniques of Assessment

No	Competence	Techniques of Assessment	Description
1	Spiritual and Social Competence (Core competence 1 and 2)	Observation	By using the senses, whether directly or indirectly, the teachers observe the students by using observation sheets containing some indicators.
		Self-assessment	The teachers ask the students to let them know their strengths and weaknesses after teaching and

			learning activities.
		Peer evaluation	The teachers ask the students to assess their partners.
		Journal	It contains the teachers' notes about their students inside and outside classrooms.
2	Knowledge (Core competence 3)	Written test	It includes objective tests, essays, true-false, etc.
		Oral test	It includes a list of questions.
		Tasks	It involves homework or projects done individually and/ or in groups
3	Skills (Core competence 4)	Performance-based test	The students are asked to demonstrate an activity or behavior based on the competencies.
		Projects	It consists of learning tasks covering planning, doing, and reporting orally and/or in writing.
		Portfolios	The assessment is conducted by assessing the collection of students learning products.

These basic concepts are often included in the construction of an assessment: determine explicitly and precisely what you want to measure, design tasks or test items that enable students to demonstrate this knowledge or skill, decide what you will consider as proof of the degree to which this knowledge or skill has been demonstrated by students. This general three-part process applies to all assessments, including assessment of Higher Order Thinking Skills. There are almost always

three additional principles to assess Higher Order Thinking Skills: provide something for students to think about, usually in the form of introductory text, visuals, scenarios, resource content, or topics of some kind, use novel material, material that is new to the student, not discussed in the classroom and thus subject to recall, Distinguish between difficulty level (easy versus difficult) and thinking level (Lower-Order Thinking or recall versus Higher-Order Thinking), and separate control for each.

3. HOTS Based Assessment

Assessment is the process of gathering information to measure the achievement of student learning outcomes. Student learning assessment consists of three aspects, namely attitudes, knowledge, and skills. In the 2013 revised curriculum, learning assessments emphasized HOTS. It supports the principle of education that students need to learn to become good thinkers (Anstey & Bull, 2006; Dewey, 1993; Norris & Ennis, 1989; Pithers&Soden, 2000; Resnick, 1987; Underbakke, Borg, & Peterson, 1993; Wilson, 2000).

The term HOTS is closer to Bloom Taxonomy. Bloom (1956) introduced a conceptual framework of thinking skills called Taxonomy Bloom. It is a hierarchical structure that identifies the ability to think from the lowest level to the highest. Bloom divided educational goals into three domains of intellectual abilities, namely cognitive, affective, and psychomotor.

a. Cognitive

The cognitive domain includes mental (brain) activities. All efforts related to brain activity include the cognitive level. There are six levels of the thinking process in the cognitive domain, from the lowest to the highest, namely knowledge, comprehension, application, analysis, synthesis, and evaluation. However, Anderson &Krathwohl (2001) changed Bloom Taxonomy from a noun to a verb. They concluded that changing this category is important because the bloom taxonomy is a description of the thinking process. It does not describe learning outcomes in the form of nouns. The changing of thinking process by Anderson from the lowest to the highest, namely remembering, understanding, applying, analysis, evaluation, and creation. To be specific, the dimension of knowledge by Anderson and Krathwohl includes four dimensions, namely factual, conceptual, procedural, and metacognitive knowledge.

1) Factual

In a discipline or teaching subject, factual knowledge requires conventions of basic elements in the form of words or symbols (Anderson, L. & Krathwohl, D. 2001). In factual knowledge, there are two sub-materials, namely knowledge of terms and knowledge of certain facts and elements.

2) Conceptual

Conceptual awareness requires aspects of more nuanced and structured knowledge. This knowledge is divided into three categories:

knowledge of classifications and categories, knowledge of concepts and generalizations, knowledge of theories, models, and structures.

3) Procedural

Procedural knowledge is "knowledge of how" to do something (Anderson and Krathwohl, 2001). To complete a task or produce a product, procedural knowledge is knowledge in the form of a sequence of steps that must be taken. Skills, algorithms, strategies, and methods are those included in this knowledge.

4) Metacognitive

Metacognitive is an interpretation of general cognition (Anderson & Krathwohl, 2001). In Anderson and Krathwohl (2001), Flavell claimed that metacognition is awareness of strategies, tasks, and variables of individuals. Those covered in this knowledge are the comprehension of general learning and reasoning techniques by students, knowledge of cognitive tasks, and when or why the students use the various strategies, knowledge of self-motivation.

b. Affective

Anything connected to emotions, such as thoughts, beliefs, appreciation, excitement, interests, motivation, and attitudes, is included in the affective dimension. In this dimension, five categories are sorted from the basic to the most complex actions, namely receiving, reacting, meaning, organization, and characterization.

c. Psychomotor

Psychomotor dimensions include movement and physical coordination, motor skills, and physical abilities. Skills can be honed and trained by repeating them or doing them frequently. There are seven categories in this dimension, from the simplest to the most complex levels, namely perception, readiness, directed reaction, natural reaction, complex reaction, adaptation, and creativity.

4. HOTS in Vocational Education

Vocational education prepares the students to have quality and skills for working based on their field or needs. Evans & Edwin (2000:24) stated that vocational education is a part of the education system which prepares individuals for a job or group of jobs. Moreover, Heikkinen (2003) argues that vocational education is an education for a job or several kinds of jobs individuals choose or their social needs. According to the House Committee on Education and Labor (HCEL: 2005), vocational education is a kind of talent development, education of basic skills and habits which lead to job markets and is seen as skill training. All of those definitions share a common idea of the US National Council for Research into Vocational Education (NCRVE, 2000:15) which stated that vocational education is an education subsystem that specifically helps students prepare themselves for vocations. Also, Chappell (2003) stated that the main purpose of vocational education is to improve students' abilities, so they can have a better life.

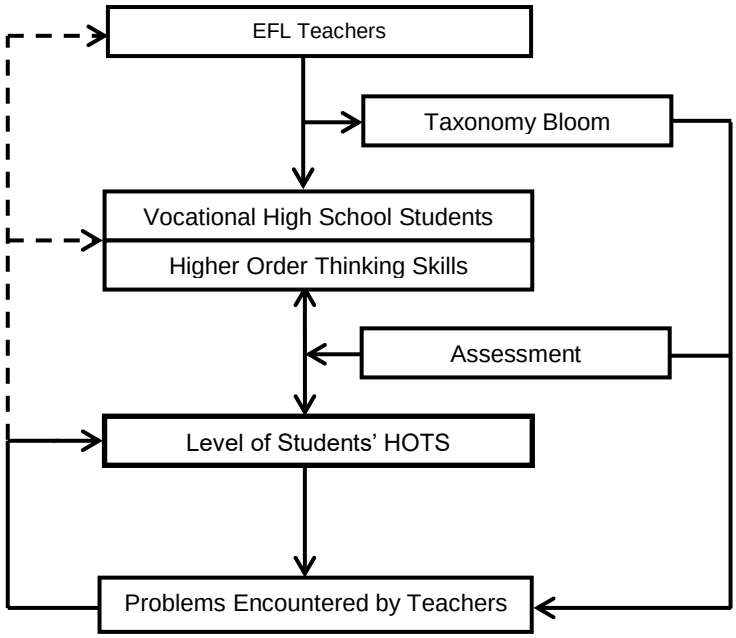
Consequently, vocational education is challenged to find ways to enable students to succeed in work and their life through the mastering of creative and critical thinking skills, problem-solving, collaboration as well as innovation. That is in line with HOTS learning objectives which expect students to be able to transfer knowledge, think critically, and solve problems. Trilling & Fadel (2009), Ledward & Hirata (2011), Partnership for 21Century Learning; National Science Foundation, Educational Testing Services, NCREL, Metiri Group, Pacific Policy Research Center, and others demonstrated the importance of 21st-century skills to achieve the requirement.

Wagner (2010) and Harvard University's Change Leadership Group identified seven skills and survival abilities required by students in the 21st century to face their lives, work, and citizenship, namely: (1) critical thinking and problem-solving skills, (2) collaboration and leadership, (3) agility and adaptability, (4) initiative and entrepreneurial spirit, (5) capable of communicating orally and writing effectively, (6) capable of accessing and analyzing information, and (7) curiosity and imagination. Moreover, US-based Apollo Education Group identifies ten skills needed by students to work in the 21st century, namely: critical thinking skills, communication, leadership, collaboration, adaptability, productivity and accountability, innovation, global citizenship, having entrepreneurship spirit., and the ability to access, analyze, as well as synthesize a piece of information (Barry, 2012). Furthermore, the US-based Partnership for 21st Century

Skills (P21) identified the competencies needed in the 21st century, namely "The 4Cs" - communication, collaboration, critical thinking, and creativity. Also, Assessment and Teaching of 21st Century Skills (ATC21S) 21st grouped 21st-century skills into 4 groups, namely way of thinking, way of working, working instruments, and world living skills (Griffin, McGaw & Care, 2012).

C. Conceptual Framework

The conceptual framework is summed up in figure 1 below.



The purpose of this study was to reveal the problems encountered by EFL teachers in assessing students' HOTS. It is known that the taxonomy bloom which has been revised by Anderson and Krathwohl categorizes the thinking process into 6 levels, namely, remembering, understanding, applying, analyzing, evaluating, and creating. In this

context, teachers are required to carry out learning and assessment based on HOTS itself. This is also following the mandate of the 2013 revised curriculum. However, it's not an easy job to teach and evaluate this high-level thinking ability. Teachers will face several difficulties or issues. So, this study aims to reveal in detail the problems encountered by EFL teachers in assessing students' Higher Order Thinking Skills through in-depth interviews.