

**COGNITIVE LEVEL ANALYSIS OF ENGLISH SEMESTER TEST FOR  
GRADE X STATE SENIOR HIGH SCHOOLS IN BUKITTINGGI**

**THESIS**

**Submitted as a Partial Fulfilment of the Requirements to Obtain Bachelor of  
Education (B.Ed) in English Language Education**



**By:**

**NADYA ISMAH KHAIRUNNISA**

**18018074**

**Advisor:**

**Prof. Dr. M. Zaim, M.Hum**

**NIP. 196103211986021001**

**ENGLISH LANGUAGE AND LITERATURE DEPARTMENT**

**FACULTY OF LANGUAGE AND ARTS**

**UNIVERSITAS NEGERI PADANG**

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**HALAMAN PERSETUJUAN SKRIPSI**

Judul : Cognitive Level Analysis of English Semester Test for  
Grade X State Senior High Schools in Bukittinggi  
Nama : Nadya Ismah Khairunnisa  
NIM : 18018074  
Program Studi : Pendidikan Bahasa Inggris  
Jurusan : Bahasa dan Sastra Inggris  
Fakultas : Bahasa dan Seni

Padang, Februari 2023

Disetujui oleh,

Pembimbing



Prof. Dr. M. Zaim, M. Hum  
NIP. 19610321 198602 1 001

Mengetahui

Ketua Departemen Bahasa dan Sastra Inggris



Desvalini Anwar, S.S., M.Hum., Ph.D.  
NIP. 19710525 199802 2 002

**HALAMAN PENGESAHAN LULUS UJIAN SKRIPSI**

**Dinyatakan lulus setelah dipertahankan di depan Tim Penguji Skripsi Program Studi Pendidikan Bahasa Inggris Jurusan Bahasa dan Sastra Inggris Fakultas Bahasa dan Seni Universitas Negeri Padang**

**dengan judul:**

**Cognitive Level Analysis of English Semester Test for Grade X State Senior High Schools in Bukittinggi**


**Nama : Nadya Ismah Khairunnisa**  
**NIM : 18018074**  
**Program Studi : Pendidikan Bahasa Inggris**  
**Jurusan : Bahasa dan Sastra Inggris**  
**Fakultas : Bahasa dan Seni**

**Padang, Februari 2023**

**Tim Penguji**

**Tanda Tangan**

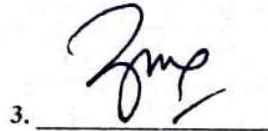
**1. Ketua : Prof. Dr. Jufrizal, M.Hum**

**1.** 

**2. Sekretaris : Dr. Ratmanida, M.Ed**

**2.** 

**3. Anggota : Prof. Dr. M. Zaim, M.Hum**

**3.** 



### SURAT PERNYATAAN TIDAK PLAGIAT

Saya yang bertanda tangan dibawah ini:

Nama : Nadya Ismah Khairunnisa  
NIM / TM : 18018074 / 2018  
Program Studi : Pendidikan Bahasa Inggris  
Departemen : Bahasa dan Sastra Inggris  
Fakultas : Bahasa dan Seni

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Diketahui oleh,

Ketua Departemen Bahasa dan Sastra Inggris

Desvalini Anwar, S.S, M.Hum, Ph.D

NIP. NIP.19710525.1999802.2.002

Saya yang menyatakan,



Nadya Ismah Khairunnisa

NIM. 18018074

## ABSTRACT

**Khairunnisa, Nadya I. (2023) *Cognitive Level Analysis of English Semester Test for Grade X Senior High Schools in Bukittinggi*. English Language and Literature Department, Faculty of Language and Arts, Universitas Negeri Padang**

This study aimed to explore the cognitive level of questions used by teachers on English semester tests for grade X academic year 2021/2022 at senior high schools in Bukittinggi and the problem faced by English teachers at senior high schools in Bukittinggi in constructing HOTS questions test. This research conducted by using descriptive method. The writer chose five senior high schools in Bukittinggi: SMAN 1 Bukittinggi, SMAN 2 Bukittinggi, SMAN 3 Bukittinggi, SMAN 5 Bukittinggi, and SMAN 5 Bukittinggi. In collecting the data, the writer used the document analysis and interview. From the data analysis, the writer found that English semester test made by teachers at senior high schools contained less HOTS questions where its only cover 12,9% or 23 questions out of 177 total questions. Lack of understanding and students' readiness in receiving HOTS questions become the problem that faced by teachers in designing HOTS questions. According to the findings, the writer suggests teachers be more often involve HOTS questions into semester test. In addition, teachers should be provided with proper training related to HOTS in order to help teacher to be more familiar with designing HOTS questions.

**Keywords:** High Order Thinking Skill, semester test, cognitive level, cognitive level analysis

## ABSTRAK

**Khairunnisa, Nadya I. (2023) *Cognitive Level Analysis of English Semester Test for Grade X Senior High Schools in Bukittinggi*. Departemen Bahasa dan Sastra Inggris, Fakultas Bahasa dan Seni, Universitas Negeri Padang**

Studi ini bertujuan untuk mengeksplor level kognitif dalam butir pertanyaan yang digunakan oleh guru dalam soal semester Bahasa Inggris untuk kelas X tahun ajaran 2021/2022 pada SMA Negeri di Kota Bukittinggi dan permasalahan yang dihadapi oleh guru di SMA Negeri di Bukittinggi dalam membuat soal bertipe HOTS. Penelitian ini dilaksanakan menggunakan metode deskriptif. Penulis memilih lima (5) SMA di Bukittinggi: SMAN 1 Bukittinggi, SMAN 2 Bukittinggi, SMAN 3 Bukittinggi, SMAN 5 Bukittinggi, dan SMAN 5 Bukittinggi. Dalam mengumpulkan data, penulis menggunakan analisis dokumen and wawancara. Berdasarkan analisis data, penulis menemukan bahwa soal semester Bahasa Inggris yang dibuat oleh guru di SMA negeri mengandung sedikit soal tipe HOTS dimana hanya mencakup 12,9% atau 23 butir pertanyaan dari total 177 butir pertanyaan. Kurangnya pemahaman dan kesiapan siswa dalam menerima soal semester tipe HOTS menjadi permasalahan yang dihadapi guru dalam membuat soal tipe HOTS. Berdasarkan temuan tersebut, penulis menyarankan guru untuk lebih sering memasukkan soal tipe HOTS ke dalam soal semester. Selain itu, guru juga perlu didukung dengan pelatihan mengenai asesmen HOTS yang bertujuan untuk membantu guru agar dapat lebih familiar dengan pembuatan soal tipe HOTS

Kata kunci: High Order Thinking Skill, soal semester, level kognitif, analisis level kognitif

## ACKNOWLEDGEMENT

Alhamdulillah, all praise be to Allah SWT for all mercy and blessings so the writer was able to finish the thesis entitled “Cognitive Level Analysis of English Semester Test for Grade X State Senior High Schools in Bukittinggi” as one of the requirements to obtain the Bachelor Degree (B.Ed) in English Department, Faculty of Languages and Arts, Universitas Negeri Padang.

The writer believe that this thesis would not be completed without the helps, supports, motivations, advices, and prays from the following people:

1. To the head of English Department, Desvalini Anwar, S.S, M.Hum., Ph.D., and the secretary of the department, Dr. Muhd. Al Hafizh, S.S, M.A
2. To the writer’s advisor, Prof. Dr. M. Zaim, M.Hum., for his guidance, valuable comments and suggestions, and patience during the period of the thesis guidance.
3. To the examiners, Prof. Dr. Jufrizal, M.Hum and Dr. Ratmanida, M.Ed. for their suggestions, guidance, and ideas towards the improvement of this thesis.
4. To the writer’s academic advisor, Dra. Aryuliva Adnan, M.Pd and Nofrina Eka Putri, S.Pd., M.Pd. who guide the writer during the study in English Department.
5. To all lecturers and staff in this department who have shared precious knowledge, advices in facing life and study experiences that could not be forgotten.

6. To the teachers and staff of SMA Negeri 1 Bukittinggi, SMA Negeri 2 Bukittinggi, SMA Negeri 3 Bukittinggi, SMA Negeri 4 Bukittinggi, and SMA Negeri 5 Bukittinggi for giving permission, helps and their cooperation during the process of this research.
7. To the writer's beloved parents, Harpizon Astani and Meri Fitria, and the sister, Alya Mardhatillah for constant love, care, support, and motivation during the completion of the research.
8. To the writer's best friends, Tasya Lavinska Agustin, for all the helps, supports and friendship through the writer's up and down during the process of this research
9. To the writer's friends in K-1 International Class for all the supports and great experience in facing college life
10. To that person who always accompany the writer during the study in Universitas Negeri Padang.

Finally, the writer realizes that this thesis is not perfect yet. However, the writer hopes this thesis can be useful for herself and for the people in general. Therefore, critics and comments are useful for the improvement of this thesis.

Padang, January 2023

Nadya Ismah Khairunnisa

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## CHAPTER I

### INTRODUCTION

#### A. Background of the Problem

With the rapid development of technology and several fields of everyday life, the world expects a better quality of human beings which achieve through the development of the education system. Knowledge and innovation skills, life and job skill, and technology and information skill are the components of achieving the primary goal of 21st-century learning (Gilboy et al. 2015). These skills are related to the teaching and learning process in class. The learning process focuses on student-centered and project-based activities developed through applying high-order thinking skills (HOTS) in the learning process (Şener et al., 2015). HOTS allows students to solve life problems by finding creative and innovative solutions through critical thinking. HOTS also encourage students to strengthen their skill in analyzing, evaluating, creating, and solving the problem in daily life, which is needed as human to meet the challenge of the 21st century (Ganapathy & Kaur, 2014).

High order thinking skill (HOTS) is a level of thinking ability in processing and understanding phenomena through several thinking processes, which involve processing information, developing understanding, applying knowledge, resolving issues, and conducting research (Hoque, 2016a). Thinking in higher level acquire a complex process where students have to construct and combine the knowledge with their ideas. Newmann and Onosko in Shafeei et al., (2017) state that HOTS is known as expansion of mind where a person should evaluate or analyze the answer or modify the information.

In the learning process, there are three main domains of learning: cognitive (thinking) domain, affective (feeling) domain, and psychomotor (kinesthetics) domain. In cognitive domain, students are retrieving and understanding knowledge in the learning process and have to process the knowledge into a higher level of thinking, which refers to critical thinking (Bloom, 1956). Anderson et al. (2001) developed and revised Bloom's taxonomy. They developed dual-dimension taxonomy consisting of knowledge and cognitive process types that include remember, understand, apply, analyze, evaluate, and create, which is well known as the cognitive level (C1-C6).

In order to assess a student's achievement during a particular period of learning, several tests are administered based on their function: diagnostic test, formative test, and summative test. A diagnostic test is a set of tests used to measure students' weaknesses to find the right solution to cope with them. Diagnostic tests are conducted at the beginning of the learning process, usually called prerequisite tests. Formative test is a test conducted at the end of a specific program, where it is usually called a post-test. Post-test is purposed to see whether the program aims for the right goals. In comparison, summative test is conducted after a group gives a more extensive program in a certain period. Summative tests can be conducted through portfolios, projects, or written tests. One summative written test conducted is semester test.

Semester test is held at the end of the semester or after 16 weeks of teaching and learning process. Semester test is categorized as a summative test that is purposed to see how far students achieve the standard competence and determine whether the students are allowed to follow the next stage of learning material.

Semester test is conducted for all the subjects taught in school, including English. The test is usually conducted in a written test created by MGMP (teacher association in region) or by particular subject teachers in school.

As the accordance of HOTS in curriculum 2013, the test conducted in school must be improvised and should be able to test students' critical thinking. The test item should be in higher level in order to train students to think critically (Widana, 2017). In creating questions, there should be three cognitive levels: 1) Low category, which includes recall (C1) and comprehension (C2), 2) Medium category which includes application (C3), and 3) High category which includes analysis (C4), evaluation (C5) and create (C6).

Even though the teacher started to involve HOTS in the learning process, HOTS in the test is still not appropriately involved. On previous research conducted by (Widiyaningsih & Septiana, 2019) about HOTS questions in national examination in academic year 2016/2017 and 2017/2018, they found that only 6 and 9 out of 50 questions are classified into analysis level. Meanwhile, there is no question classified into the evaluation level and create level which is the higher question type. The tests mainly consist of understand level (C2), which requires students to comprehend the texts. The conclusion is that the national examination in academic year 2016/2017 and 2017/2018 considered low order thinking skills (LOTS), which both tests dominate by lower cognitive level.

In line with Widiyaningsih & Septiana's research, Ramadhana et al. (2018) conducted similar research related to HOTS-based question in test items developed by teachers. This research that focused on midterm test of 2016 and semester test and

2017 found that teachers include up to 25% of HOTS question in tests. Even though the percentage is pretty high, the amount of HOTS question is still low than the proper proportion which is about 30%.

The other research conducted by Syahdanis et al. (2021) found that the distribution of HOTS test items in teacher-made test on grade X and XI in two senior high schools obtained lower distribution than MOTS and LOTS. In the test made by the teacher, they found the test mainly consists of MOTS, which covers 60% up to 85%. They also researched the reason for the minor appearance of HOTS in the test: the teachers lack professional training in designing the HOTS test. Another reason that teachers worried that some students are weak in HOTS and would not be able to solve the problem in HOTS questions.

The fact that Indonesian students are weak in critical thinking is according to findings by PISA (Programme for International Students Assessment) in 2018. A survey to measure students' ability in reading, math and science showed that Indonesia ranked on 10 from below among 79 countries participated. Indonesian students' reading ability scored 371 which is 80 points under the average score. So does with other skills such as math ability and science ability, which are 52 and 37 points under the average score. As Indonesia classified in level 1A, Indonesian students are considered to have low reading, math, and science ability (Schleicher, 2019). This phenomenon happened because of teachers tend to measure low-order thinking skills where teachers usually focus on theories, not contextual material related to real-life problems. The impact is that students are not trained enough to solve questions that required analysis, argumentation, and creativity where those are the characteristics of HOTS questions.

As the research and data opposed previously, we can see that teachers are not omit HOTS properly in tests conducted in school, while the tests should be able to measure students' ability in critical thinking. Due to that, semester test developed by teachers should be evaluated and analysed comprehensively. The semester test designed by different teachers may have different knowledge on HOTS. The writer wants to know what cognitive level of questions occur in semester tests designed by teachers in several different senior high schools and what cognitive level are dominant on the test.

By finding the cognitive level of questions occur and how dominant the cognitive level in the test, the test can be classified into HOTS question or LOTS question, which shows the effectiveness of semester test in testing students' critical thinking. The result of the analysis also can be used as an evaluation for teachers to create useful question items to measure students' thinking skills. The writer hopes this research helps in improving semester test items and increase students' ability to think critically. The analysis conducted on English semester test for grade X because of the reason that students in grade X is considered as the appropriate grade to increase the critical thinking. The writer hopes that by evaluating the semester test question items made by English teachers for grade X will help students in critical thinking which will prepare them for the future matter and help in preparing students in grade X for national assessment which may contribute on improving students and school's education quality.

## **B. Identification of the Problems**

Based on the background explained above, the writer identifies several problems as follows:

1. Indonesia students' ability in reading is still low, which is shown on PISA's survey rank that Indonesia is still in level 1A.
2. Teachers are rarely giving HOTS questions because teachers lack professional training in designing HOTS questions and because teachers are afraid that students cannot solve HOTS questions.
3. Because teachers rarely give HOTS questions in the test, students are not used to solving HOTS questions
4. HOTS questions in several English tests have low percentage, which is shown through its distribution of low cognitive level

## **C. Limitation of the Problem**

Based on the identification of the problem explained above, the writer limit the problem to the low percentage of HOTS questions in English tests, which is seen through the dominance of low cognitive level questions in the test. The writer focuses on discussing the cognitive level of questions in the English semester test conducted on the first-semester academic year 2021/2022 at senior high schools in Bukittinggi.

## **D. Formulation of the Problem**

Based on the limitation of the problem above, the problem of this research is formulated as follows: "What are the cognitive level of questions applied by teachers

on English semester test for grade X students at senior high schools in Bukittinggi in academic year 2021/2022?”.

#### **E. Research Questions**

Based on the formulation of the problem above, the writer attempts to answer these questions:

1. What are the cognitive levels of question used by teachers on English semester tests for grade X academic year 2021/2022 at senior high schools in Bukittinggi?
2. What are the problems faced by English teachers at senior high schools in Bukittinggi in constructing HOTS questions test?

#### **F. Purpose of the Research**

Considering the research question above, the purpose of the research as follows:

1. To know the levels of question used by teachers on English semester tests for grade X academic year 2021/2022 at senior high schools in Bukittinggi
2. To know the problems faced by English teachers at senior high schools in Bukittinggi in constructing HOTS questions

#### **G. Significance of the Research**

The writer hopes this research can contribute to English teaching and learning. This research has two major significances:

1. Theoretical

The result of this research is expected to help in improving students' ability to solve higher level of questions which may contribute to increasing PISA's survey rank.

## 2. Practical

### a. For English teacher

The result of this study is expected to be teachers' consideration in designing tests.

### b. For students

The result of this study is expected to help improve test quality which will help in stimulate students' ability to think in high-order thinking skills.

### c. Other researchers

To give additional information to other researchers who want to conduct further research in this field.

## H. Definition of the Key Terms

### 1. High-Order Thinking Skill (HOTS)

High Order Thinking Skill is an ability to understand and find the solution to problems that focus on problem-solving through many processes such as collecting information, understanding the information, and constructing the information to create new ideas

### 2. Semester test

A test is a procedure arranged to measure and determine the level of knowledge that a group or individual has reached. A semester test is a test

conducted at the end of a semester to measure students' achievement in learning objectives.

3. Cognitive Level

The hierarchy of learning ability which arranged from the simplest process to the more complex process of acquiring knowledge in order to understanding the new experiences and thought. This concept introduced by Bloom and later well-known as Bloom's taxonomy.

4. Cognitive Level Analysis

Analysis conducted in order to find out the level of question according to how students' process the knowledge and experience by using the concept of Bloom's taxonomy.

## CHAPTER V

### CONCLUSIONS AND SUGGESTIONS

#### A. Conclusions

Based on the data analysis explained, the writer made conclusion that referred to answer the research questions. In analysis of cognitive levels of questions used by teachers on English semester test, the writer concludes that English teachers at state senior high schools in Bukittinggi are preferred to create semester test question items in lower cognitive level of questions as the less occurrence of HOTS questions in English semester test for grade X academic year 2021/2022 at state senior high schools in Bukittinggi. The less occurrence of HOTS questions is shown where the semester tests only cover 12,9% or 23 question out of 177 total questions collected. In detail, HOTS questions or analysis level (L3) consist of 21 questions or 11,9% of C4 (analyze), 1 question or 0,6% of C5 (evaluate) and 1 question or 0,6% of C6 (create).

Meanwhile in finding the problem faced by English teachers at senior high schools in Bukittinggi on constructing HOTS questions, the writer concludes there are two aspects that become the major problems that faced by English teachers at state senior high schools in Bukittinggi on constructing HOTS questions, those are: the teachers' aspect and the students aspect. In teacher aspect, the problem found is that teachers are unfamiliar of knowledge related to HOTS question. Meanwhile, in students' aspect, the problem found is that students are not ready to be given HOTS questions. Based on the interview conducted, teachers feel that they do not provide with proper training about HOTS which lead to teachers' unfamiliarity with HOTS.

Another problem is teachers' consideration about students' ability in solving HOTS questions as they are not used to solve higher level of questions.

## **B. Suggestions**

Considering the result of the research, the writer offered several suggestions as follows:

1. Due to the domination of LOTS and MOTS questions in semester tests made by English teachers at state senior high schools in Bukittinggi, teachers should be more often involve HOTS questions into semester tests.
2. Teachers should be provided with proper training about HOTS which will help teachers to be familiar with assessment by using HOTS and might help them to construct more higher level of questions.

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