# CHAPTER IVTHE RESEARCH FINDINGS, DATA ANALYSIS, AND DISCUSSIONS

* 1. General Remarks

This chapter presents the result of the analysis of the research data collected. The researcher related the literature review to the research findings, data analysis, and discussions. The researcher came up with document analysis and interview in the research findings. Then, the researcher continued to the explanation of the results. In data analysis, the researcher explained the theory with the research findings. The researcher discussed the study’s findings with the questions presented previously in the research questions.

* 1. The Research Findings

The researcher conducted the study on one participant who made the English test items in this study. The gender of the participant is male. He has been teaching for 15 years. He has taught Elective English subjects in Twelfth grade for ten years. In this study, he supplied to provide examination documents he made and a role as a resource person in the interview to meet the data in this study. He gave some Elective English examination documents such as Mid Semester Assessment, Final Semester Assessment, and School Examination.

Furthermore, at this point, the researcher explained the result of the data that have been analyzed by the researcher, including the document of Mid-Semester Assessment, Final Semester Assessment, and School Examination. These types of tests are essential to test the ability of students to understand the lesson and as a condition for increasing class. Furthermore, the researcher analyzed the findings using document analysis and semi-structured interviews to construct robust data.

In addition, the final learning assessment is carried out as Mid Semester Assessment. This type of test must be held because, according to the Assessment Guide book endorsed by the Director-General of Primary and Secondary Education in 2017, educators assessed the final learning results. This assessment is an Assessment of Learning. This assessment is crucial because the result will be used as a tool by teachers to see the students’ success in absorbing and understanding the material taught within three months at the beginning of the semester.

Also, the Final Semester Assessment is a grade increase requirement designed to encourage meaningful learning activities. The Minister of Education and Culture No. 23 of 2016 in 2016 said that one of the assessments of learning outcomes by the education unit is carried out in the form of Final Semester Assessments. Thus, Final Semester Assessments must be held because they are needed as a form of evaluation for teachers learning outcomes.

Moreover, the Minister of Education and Culture No. 23 of 2016 in 2016 stated that the School Examination is carried out in the form of one of the assessments of learning outcomes. Therefore, this exam is essential for a determination in graduating students.

Therefore, by looking at the importance of the exam in education as the Minister of Education and Culture proposed, this study intends to analyze the test items in the examination for Twelfth Grade in Elective English subjects regarding the cognitive level of HOTS that appear and to see the teacher’s perceptions in making the cognitive levels of HOTS applied in English test items. After analyzing the test items, this study obtained the following results, as follows:

1. * 1. **The Cognitive Levels of HOTS**

The researcher obtained three types of documents to analyze. The result the cognitive levelsof HOTS applied to English test items such as in summative tests as follows:

* + - 1. **Mid-Semester Assessment**

The 20 items of the Mid-Semester Assessment were analyzed, and the result was shown below:

Table 4. 1 Comparison HOTS with Test Items from Mid-Semester Assessment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cognitive Taxonomy** | **I. Remembering** | **II. Understanding** | **III. Applying** | **IV. Analyzing** | **V. Evaluating** | **VI. Creating** |
| Items | 17, 18, 19 | 13, 14, 16 | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 20 | 12, 15 | - | - |

As seen in Table 4.1, the item tests in the Mid-Semester Assessment showed that of the 20 items, as many as 18 items are included in the LOTS level, which included in the category remember (C1) 3 items, understanding (C2) 3 items, and applying (C3) 12 items. In contrast, only 2 items are included in the HOTS level, which is only the analyzing (C4) category. The HOTS category evaluating (C5) and creating (C6) were not applied.

* + - 1. **Final Semester Assessment**

The 25 items of the Final Semester Assessment were analyzed, and the result was shown below:

Table 4. 2 Comparison HOTS with Test Items from Final Semester Assessment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cognitive Taxonomy** | **I. Remembering** | **II. Understanding** | **III. Applying** | **IV. Analyzing** | **V. Evaluating** | **VI. Creating** |
| Items | - | 3, 5, 22, 23 | 1, 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 | 21, 24, 25 | - | - |

Table 4.2 showed that the item tests in the Final Semester Assessment that of the 25 items, as many as 23 items are included in the LOTS level, which include the categories understanding (C2) 4 items, and applying (C3) 18 items. At the same time, only 3 items are included in the HOTS category, which is only the analyzing (C4) category. The HOTS category evaluating (C5) and creating (C6) were not applied.

* + - 1. **School Examination**

The 45 items of the School Examination were analyzed, and the result was shown below:

Table 4. 3 Comparison HOTS with Test Items from School Examination

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cognitive Taxonomy** | **I. Remembering** | **II. Understanding** | **III. Applying** | **IV. Analyzing** | **V. Evaluating** | **VI. Creating** |
| Items | - | 1, 2, 3, 4, 5, 6, 7, 8, 12, 24, 14 | 17, 18, 19, 10, 21, 23, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 | 10, 11, 13, 15, 16, 22, 41, 42, 45 | 9, 44 | 43 |

Table 4.3 showed that the item tests in the School Examination indicated that of the 45 items, as many as 33 items are included in the LOTS category, including understanding (C2) 11 items, applying (C3) 22 items. In contrast, only 12 items are included in the HOTS category, those are analyzing (C4) 9 items, evaluating (C5) 2 items, and creating (C6) only 1 item.

The following finding related to the cognitive levels applied to the test items. After the documents have been researched, all of the cognitive level of HOTS (C4-C6) was significantly appeared in the English examinations, but it was only in School Examination. Moreover, in the rest of test items such as in Mid-Semester Assessment and Final Semester Assessment, for evaluating (C5) and creating (C6) level were not found, only analyzing (C4) level appeared. Furthermore, for the Mid-Semester Assessment, cognitive levels of evaluating (C5) and creating (C6) did not appear.

* + 1. **The Teacher’s Perceptions**

As gathered from interviewing the teacher who made the test, there were encountered some points that were mentioned to represent the factors in making the cognitive levels of HOTS applied in English test items such as Mid-Semester Assessment, Final Semester Assessment, and School Examination. First, the application of HOTS in the test items was less applied in the form of multiple-choice questions. The teacher who made the test expressed his reason:

*“HOTS itu kan sebenarnya bukan bentuk soal yang sulit ya, tetapi soal yang perlu daya pikir tingkat tinggi sebetulnya. Cuma saya pikir ketika dipake di kelas, selama ini sebetulnya kita kan kalo nilai itu ngetroll ya jadi bapak pikir ya dari pada kita menggunakan bentuk soal yang susah, anak-anak ujungnya nilainya 30 yaudah kita pakai yang LOTS biar semua anak itu nanti bisa mengerjakan yang dia pelajari di kelas yang memang seperti itu. Karena pengetahuan anaknya juga gitu, pengetahuan awalnya atau enteral behaviournya anaknya juga datang dari pengetahuan awal bahasa Inggris yang buruk dari SMPnya. Jadi udah aja yang diajarin itu yang minimal dia tau aja, yang basic karena kalau dinaikin juga gak mungkin dari pada yang bagus soalnya anaknya gabisa ngerjain.”*

(HOTS is actually not a form of a difficult problem, but HOTS is the item that needs critical thinking ability. But I think when HOTS used in class, during the time we actually gave not pure score, then I think than we used the difficult items, and the children ended with 30 score. Thus, we used the LOTS category, so that all the children can do what they learned in class. And that is showed like that, because the children’s knowledge is also like that. They initial knowledge or enteral behavior also came from their initial poor knowledge of English from their Junior High School. Therefore, I taught it at least they knew already, such as the basic because if the difficult items used, then they can’t answer the items.)

As mentioned by the teacher, the reason for less application of HOTS is caused by the initial ability of students who are challenged to apply HOTS in the lessons conducted. Therefore, the teacher has the initiative to apply LOTS problems rather than HOTS-based problems. One is the School Examination problem, which primarily applies LOTS of questions. According to Widana (2017), the US questions prepared by teachers so far primarily only measure level 1 and level 2. Furthermore, the other cause is the lack of insertion of HOTS questions in the US which causes students not to be accustomed to working on HOTS questions. In addition, the teacher also pointed out that not many HOTS were applied to each exam question made.

*“Karena sebetulnya untuk soalnya kan hampir jenis LOTS semua ya, jadi bapak gak bisa menentukkan ketercapaian di HOTS. Tapi sebenernya untuk dikasih level LOTS pun nilainya masih tetep aja masih ada yang 30 gitu kan. Cuma masalahnya dikasih soal apa pun ya tetep gitu, paling presentase anak yang lebih dari ketercapaian itu paling 40%, sisanya 60% udah di bawah KKM semua sebetulnya. Kalo berbicara real ya.”*

(Because actually almost all the items’ types were LOTS, so I can’t determine the achievement in HOTS. And actually, to be given the LOTS level, there are still got 30 for the score. But the problem when the students were given about the kinds of any items, they still only got the bad score. The percentage of students who got more than the achievement was at least 40%, the remaining 60% is actually under KKM (Minimum Learning Mastery Standard). If talk about the fact.)

The teacher explained that most of the HOTS-based questions were applied in the interview. Because, in reality, the students have not been able to answer or are not accustomed to answering HOTS-based test items. Aligned with the above transcripts, the teacher again explained the percentage of HOTS applied to the questions.

*“Paling ya kalo saya buat 20% an lah gak banyak. Atau ya hampir semua nya Low to Middle semua, kalo pun ada HOTS itu kurang lebih 20%. Karena kan HOTS itu apa ya… kalo menurut kita yang HOTS itu yang kriterianya bukan susah dijawab sebenernya ya. Jadi HOTS itu bukan kaitannya dengan susah, tapi perlu daya nalar yang tinggi. Cuma masalahnya anak-anak belum terbiasa seperti itu, jadi mereka pun ketika menganggap soal itu MOTS atau LOTS sekali pun anak-anak merasa kesulitan.”*

(I made 20% of HOTS items, not much. Or almost all of the items are Low to Middle items. If there are HOTS, it is approximately 20%. In our opinion, the HOTS items are not difficult to answer actually, because HOTS is not related to difficulty, but it needs high thinking ability. But the problem is that children are not used to it, even when they consider the item is MOTS or LOTS, the children think the items are still difficult.)

The teacher who made the test mentioned that HOTS could not be applied to all the test questions because it aimed to make all the students answer the tests to pass the minimum score. For example, if the students whose ability is lower to answer the 30% of HOTS question, the rest 70% or LOTS and MOTS can be the alternative for the students to answer the question (Syahdanis, Sofyan, & Yunita, 2021). That is why 100% of HOTS cannot be applied to the test, which is to create an alternative for the students to pass the minimum score because not all students have a similar ability.

Furthermore, for the Mid-Semester Assessment, cognitive levels of evaluating (C5) and creating (C6) did not appear. One of the reasons is because there is no the written item applied to the test. Written test can occur with the emergence of HOTS. It was relevant to what has been said by Sumertha (2019) that to measure HOTS would be better to use a written test. Because in the form of written test items, it is easy to see the stages of thinking that students do, the ability to transfer concepts to new situations, the creativity of building arguments and reasoning, and other things related to the measurement of HOTS. As explained by the teacher who made the questions put forward:

*“Karena daring ya, karena punya operator gitu jadi sistemnya pakai Google Form gitu. Jadi memudahkan pengoreksian, jadi tidak diserahkan pada guru. Jadi guru nanti nerima langsung hasilnya dari Google Form.”*

(Because of online learning, it has an operator, so the system used Google Form. And to make the correction is easy to do it is not handed over to the teacher. Therefore, the teacher will receive the results directly from Google Form.)

In line with what the teacher said that the application of essay questions on one of the exams is because the system made for the exam through Google Forms. The computer directly corrects exam results through Google Form with another purpose to facilitate correction, where the teacher will only directly receive the results of the grades. However, this leads to a lack of application of HOTS on the exam. Tests in the form of descriptions, especially free descriptions, require students’ ability to organize and formulate answers using their own words and can measure students’ ability to think highly (Asrul, Ananda, & Rosnita, 2014). Those kinds of questions lead to less appearance of evaluating (C5) and creating (C6) levels on the exam questions.

In addition, the results showed that of all the categories of HOTS, which appeared in the Mid-Semester Assessment, Final Semester Assessment, and School Examination, only analyzing (C4) appeared more than the evaluating (C5) and creating (C6) levels. In this case, the teacher said that:

“*Karena sebetulnya ya HOTS itu yang paling rendahnya ya itu, mulai dari sana. Jadi pada kegiatan mencipta enggaklah lah begitu ya.*”

(Because actually the lowest HOTS category is analyzing (C4) level. That is why the HOTS category started from that level. Thus, creating (C6) level was not used.)

In line with what the teacher explained, C4 appears a lot because the level is the lowest in the HOTS category. Because of the lack of students’ ability to work on the test items HOTS-based, the teacher took the initiative to appear the analyzing (C4) level more to still apply HOTS to examinations test items. On the other hand, the level of evaluating (C5) and creating (C6) level only appear in the School Examination, but still, the more dominant that appears in the item of the question is analyzing (C4) level.

“*Karena untuk level US saya membuatnya sesuai edaran dinas provinsi terkait pelaksanaan US, sedangkan untuk PAT dan PAS hanya untuk kepentingan pegumpulan nilai supaya nilainya tidak jelek*.”

(Because for the School Examination level, I made it according to the provincial office circulars related to the School Examination implementation. While for Mid-Semester Assessment and Final-Semester Assessment, it is only for the importance of collecting grades so that the grade is not bad.)

 In conclusion, the teacher explained that there are evaluating (C5) and creating (C6) levels in the School Examination because the provincial office has regulated the problem-making. The provincial office has determined the type of problem and the difficulty level. Thus, the teacher must apply the rules for making predetermined questions in the task. Therefore, because of this, the test items of the HOTS category could appear in the School Examination.

* 1. Data Analysis

In the result of the Mid-Semester Assessment, only two questions are required for HOTS category: analyzing (C4) category. There are three sub-skills of analyzing: differentiating, organizing, and attributing. The sample of questions requiring the skill of attributing can be seen in test item number 12, which questioned, “The main idea of the paragraph is that…”. This question requires the students to attributing. It involves when a student could ascertain the point of view, biases, values, or intentions underlying communications. It means the question entailed a deconstruction process in which the student determines the objectives of the author of the supplied content (Anderson et al., 2001). In comparison, sub-skill differentiating occurs when the students discriminate relevant from irrelevant information or essential from unimportant information and then attend to the relevant or important information.

Moreover, based on the result of the Final-Semester Assessment, three questions require a HOTS category; one is analyzing (C4). The sub-skills of analyzing there are differentiating, organizing, and attributing. In the sub-skills organizing, the question sample was represented by asking students to compare the paragraph of a text presented, which stated, “How do we compare the second paragraph and the fourth paragraph?” (The test item number 25). This type of question needed students to activate the skill to identify the elements of a paragraph and recognize how they fit together into the coherent structure (Anderson et al., 2001). Organizing involves identifying some components of communication or situation and determining how they fit together to create a coherent structure. While in sub-skill attributing, the students must be able to determine the point of view, biases, values, or intention underlying communications.

Furthermore, the result of the School Examination, the thirteen questions require the HOTS category: such as analyzing (C4) ten items, evaluating (C5) two items, and creating (C6) only one item. In addition, evaluating has two sub-skills: checking and critiquing. The sample of questions requiring the skill of checking can be seen in test item no.9 which questioned. Checking involves testing for internal inconsistencies or fallacies in an operation or a product. For example, a student tests whether or not a conclusion follows from its premises, whether data support or disconfirms a hypothesis, or whether the presented material contains parts that contradict one another (Anderson et al., 2001).

Moreover, creating (C6) has three sub-skills: generating, planning, and producing. The question sample was represented by asking students to arrange jumbled sentences in the correct order, which stated, “Rearrange the jumbled paragraphs below a meaningful text!” (Question no 43). This type of question needed students to activate the skill of representing the issue and developing alternatives or hypotheses that suit specific criteria (Anderson et al., 2001). Often, the initial representation of a problem indicates possible solutions; however, redefining or creating a new representation of the problem may suggest different solutions.

* 1. Discussions

This study focused on HOTS applied to English test items such as in summative tests at the Senior High School level in the academic year of 2021-2022. The documents, including Year-End Assessment, Final Semester Assessment, and Mid-Semester Assessment, have been used as data collection. The researcher has analyzed two aspects; the application of HOTS and the Cognitive Levels. Based on the previous result, it was found that the question under study was HOTS. The cognitive levels that arose in some questions included analyzing (C4) and applying (C5). According to Tan and Halili (2015), HOTS are essential as they complement the idea of lifelong learning, and learners who can think critically are in demand in the real world. Therefore, the application and emergence of this level are essential to support and stimulate student activity and critical thinking.

Moreover, in this case, the result has been proven that the application of HOTS in English test items such as summative tests, including Final Semester Assessment, Mid-Semester Assessment, and School Examination, were significantly less applied. It turns out that the LOTS category dominates more on each English test item, which is considered insufficient and has not been so perfectly implemented. Also, the teacher who made the test said that most of the questions were levelly remembering (C1) and understanding (C2). It is relevant to what has been said by Widana (2017) that, in general, the test items of school examinations compiled by teachers so far primarily measure remembering (C1) and understanding (C2) levels. Also, Auliyana in research of Syahdanis (2019) said that the higher-level questions might be rarely found because they often require the teachers to wait a considerable amount of time for the students to answer. Another cause is the absence of the test items of HOTS in school examinations which causes students not to be used to doing HOTS questions. Whereas presenting HOTS questions in school examinations can train students to hone their abilities and skills under the demands of 21st-century competencies. According to Sumertha (2019), necessary competencies needed in the 21st century, namely 4C, include critical thinking, creativity, collaboration, and communication. Thus, all competencies can be trained through HOTS, which requires students to think critically in every activity in the classroom.

Furthermore, numerous studies have been conducted on HOTS in the item test of the English examination as the research conducted in this study focuses on HOTS that is applied to summative tests at the Senior High School level. Furthermore, this research determined what HOTS levels appear in English examinations. Moreover, numerous studies have been conducted on HOTS in the item test of English examination as the research conducted in this study focuses on exams that are applied to summative tests at the Senior High School level. Moreover, to find out what HOTS level applied in the English examination. Meanwhile, in some studies such as conducted by Shahdanis (2021), they tried to analyze the distribution of thinking skills levels in English teacher-made tests for tenth grade and eleventh grade at the senior high school 6 Bengkulu city and senior high school number 11 Bengkulu city in the academic year of 2020/2021. It found that HOTS obtained lower distribution than LOTS and MOTS, while the main thinking skill level in English teacher-made test questions for both schools was MOTS.

In addition, Heliyanti, Tirtanawati & Purnama (2020) also found that this study demonstrated that they were only 16 out of 50 (32%) from respective final examinations test can be classified into C4 or analysis and C5 or Evaluate ability (Higher-Order Thinking Skills). Meanwhile, the Lower-Order Thinking Skills can be found in as many as 34 questions, or 68%. Furthermore, the researchers found three characteristics of HOTS, which consist of 6 questions of primary stimulus question characters, six questions measuring critical thinking skills character, and four questions measuring problem-solving skills character.

Meanwhile, another study by Bayaydah & Altweissi (2020) contained a Bloom's Taxonomy-based analysis of 9th and 10th grade English language textbooks' final examinations and revision questions. This study examined the English language revision questions included in the 9th and 10th-grade textbooks and the 9th and 10th Grade 1st semester final exams in 2018. According to the results, the remembering level had the highest relative average with 30.75%, while the analysis level had the lowest level with a percentage of 4.07%. In addition, the data demonstrated convergent percentages for the revision questions, where both the understanding and application levels had the highest frequency at 26.56%. The result means that the application of LOTS level in the final exam is higher than that of HOTS.