The Analysis Of Higher Order Thinking Skill Questions of Tryout And Final School Examination

(A case of Questions used by SMAN 5 Purworejo In The Academic Year 2020/2021)

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Abstract: This study aims to identify the composition of the cognitive level of higher order thinking skills Questions Of Tryout And Final School Examination and compare the LOTS and HOTS questions.This research is a qualitative research. The data collection technique is documentation. The data source is the final test of the English subject for class XI SMAN 5 Purworejo for the 2020/2021 school year. The researchers analyzed the English test questions one by one using Bloom's revised taxonomy theory. Researchers classify them into two levels of cognitive skills, namely HOTS and LOTS, then the percentage is calculated based on the cognitive level.The results of the research from the overall tryout questions and school final assignments at SMAN 5 Purworejo include 6 levels have been found which are divided into the domain of higher-order thinking and the domain of lower-order thinking skills Bloom's Taxonomy, ranging from low to high. high, namely: Remembering (C1), Understanding (C2), Applying (C3), Analyzing (C3). C4), Evaluate (C5), and Create (C6). In the final school exam questions found 35 questions with cognitive level details Remembering 13 items (37%), Understanding 17 items (48%), Applying 2 items (6%), Analyzing 3 items (9%), in the final school exam questions Evaluate (C4) and Create (C5) levels not found. While in the tryout question, the most dominant level is also at the level of understanding (C2). In the tryout questions there are 30 written questions with a taxonomic level Remembering 5 items (17%), Understanding 17 items (51%), Applying 5 items (17%), Evaluating 1 item (5%), and creating 2 items (7%, which means that 90% of other questions use lower-order thinking skills.Based on these results, it can be interpreted that higher-order thinking skills are very limited and the comparison is not balanced.

Keywords: *Bloom Taxonomy,Final School and Tryout Questionst, HOTS*

1. Introduction

This evaluation activity is very significant in education and the learning process because it shows the results of learning activities that have been completed by examining differences in obstacles from year to year in order to develop it further. Clarify tests should have a number of advantages, according to Daryanto (2012: 177), including (1) a look at the questions, (2) the setting of a question analysis, (3) validity testing, and (4) reliability testing. So that test questions are then tested more fully on test takers. Students in higher education must not only have low thinking skills (LOT), but also high-level thinking skills (HOTS), which can be approved in today's learning activities and have become a difficult multidimensional step in the field of education. The cognitive domains of Bloom's Taxonomy are listed from simple to advancedThere are six phases of information, understanding, and application in the Lower Order Thinking Skills (LOTS). According to Bloom et al., the cognitive domain is divided into six levels (1956). Remembering, understanding, and applying are examples of lower level thinking skills (LOTS), whereas analyzing, assessing, and inventing are examples of higher order thinking skills (HOTS). Bloom's thought process components were improved by Anderson & Krathwohl (2001), and they provide a useful framework for formulating and arranging instructional objectives, instructional activities, and evaluation methodologies. The updated taxonomy includes four knowledge categories and four cognitive process categories that increase in complexity.

According to several previous studies that I have read, the difference between my analysis and theirs is in the object, which only examines one question, whereas I examine two, namely final examinations and tryout questions, with the end result being a comparison percentage between the two questions that contain higher order thinking skills.

The five materials evaluated in earlier studies were nearly identical to those chosen by the researcher, namely evaluating national test questions or those that have now been replaced by the UN; the only difference The researcher's choice of analysis was not. Only school exam questions were used, however they were compared to test questions, and the questions chosen were of a high school level.

2. Literature Review

Test Basic Principles of Assessment

Assessment is the systematic collection and interpretation of data to assess how far goals have been met (Mustaqimah 2002, in Muna 2006). Assessing can be done in a variety of ways, one of which is through the evaluation of student learning outcomes. Questions can be used to assess student learning results. In this scenario, the question must be genuine and reliable, which necessitates a test question analysis.

Students will be subjected to a tryout, which is a common exercise conducted prior to school exams with the goal of providing an overview of the questions that will be asked during the exams. Because the implementation of quality learning programs is the goal of numerous educational programs, tryouts and school examinations are attempts to increase learning. Information on the results of prior learning program evaluations is required for efforts to enhance learning programs. The evaluation of the previous learning program is an essential reference for developing a better learning program. The findings of the learning program evaluation will provide the best information for improving the learning program. According to Widoyoko (2010), teacher-prepared and implemented learning programs should be evaluated in three areas: 1) learning design, which includes the competencies developed, the learning strategy chosen, and program content, 2) learning program implementation, or the quality of learning, and 3) learning program results. According to Hamalik (2003), the assessment's goal isn't just to establish a foundation for assigning grades or scores to student learning outcomes. The program for assessing student learning outcomes intends to:

a. Provides information regarding student progress in order to meet learning objectives in connection with completed activities.
b. Provide information that can be utilized to encourage students to engage in additional learning activities, both individually and in groups.
c. Provides information that teachers and students can use to assess students' abilities, identify challenges, and plan remedial activities.

Test

"A test is a strategy or procedure that is employed in order to accomplish the activity of measurement, in which there are numerous questions or assignments that should be completed by a student," according to Arifin (2011: 118). According to Arikunto (2009: 51), a test is a tool or a technique that is used to determine the outcome of a particular procedure. According to Sanjaya (2010: 2004), pupils were usually given a lot of questions or tasks from teachers during the teaching and learning process. These inquiries can take the shape of class questions, homework assignments (PR), or other forms with the goal of obtaining specific information in accordance with the current content. Task. The fundamental goal of item analysis is to gather qualitative and quantitative information about each item's properties. A question analysis can be done to determine whether or not a question will work properly. In general, the methods utilized in question analysis are qualitative analysis (qualitative analysis) and quantitative analysis (quantitative analysis), which include validity, reliability, difference power, level of difficulty, and distractor efficacy. The qualitative analysis of the items is essentially an evaluation of the items in terms of the guidelines for composing the questions, which are (1) the substance or material; (2) the construction; and (3) the structure. According to the signs, ask questions.

a. Must follow the guidelines for composing questions, such as the subject matter providing direction in the appropriate direction for multiple choice questions; answer options must be homogeneous and reasonable..
b. Questions are written in compliance with Indonesian language regulations.
c. The questions are written in a clear and transparent manner.

Before a question is tested, a qualitative question analysis is performed. The psychometric features of the questions were not described in this investigation. As a result, a number of students had to be tried out in order to establish that the questions were good. The quantitative analysis was based on the students' responses to these questions. The level of difficulty and difference power are two types of features of the questions examined in quantitative analysis.

The proportion of test takers who replied correctly to the total number of participants determines the level of difficulty. A question's discernment capacity is its ability to distinguish between capable and less capable students.A question analysis can be used to examine whether or not a question will work properly. In general, the methods utilized in question analysis are qualitative analysis (qualitative analysis) and quantitative analysis (quantitative analysis), which include validity, reliability, difference power, level of difficulty, and distractor efficacy. The qualitative analysis of the items is essentially a study of the items in terms of the guidelines for drafting the questions, which are (1) the substance or material; (2) the construction; and (3) the language.

Development of Higher Order of Thinking Skill (HOTS) Questions

Higher Order Thinking Skills, or HOTS, is the highest level in Bloom's taxonomy's cognitive hierarchy. HOTS encompasses not just the ability to recall, comprehend, and apply information, but also the ability to think critically in order to solve problems in everyday life and the ability to create something new or innovative.

HOTS can be divided into three categories based on how higher-order thinking is defined: (1) those who describe it in terms of transfer, (2) those who define it in terms of critical thinking, and (3) those who define it in terms of problem solving (Brookhart, 2010:3). The first category of HOTS Any of the cognitive taxonomies' teaching goal is to provide students with the ability to transfer information. It means that pupils should be able to connect what they're learning to other things they've learned or prior knowledge. Second, critical thinking, or the ability to think, refers to pupils' ability to make sound judgments or offer a well-thought-out critique. This is in line with the objective of education, which is to prepare pupils to think, reflect, and make sound judgments. Third, the purpose of teaching is to provide students with the ability to detect and solve difficulties in their academic work and in their daily lives. This includes addressing problems that have been assigned to them as well as solving new challenges that they have defined for themselves, resulting in the creation of something new as a solution. Students that are able to think can solve challenges and work creatively in this scenario. Based on Anderson and Krathwohl's modification of Bloom's Taxonomy (2001) Knowing (knowing-C1), understanding (understanding-C2), applying (aplying-C3), analyzing (analyzing-C4), evaluating (evaluating-C5), and creating (creating-C6) are Bloom's Taxonomy dimensions of the cognitive process. In general, HOTS questions assess skill in the areas of analyzing (C4), evaluating 21 (C5), and creating (C6) (C6-creating). It is not necessary to stick to the KKO grouping when choosing verbs operations (KKO) to develop indicators concerning HOTS. In Bloom's Taxonomy, for example, the verbs 'determine' relate to the domains C2 and C3. If to make a decision preceded by a cognitive process assessing the information supplied on stimulus and then students are asked to decide the optimal decision, the verb ‘determine' may be present in the realm of C5 (evaluation) in the context of composing HOTS questions. If inquiries need the ability to invent new problem-solving procedures, even the verb ‘determine' can be categorized as C6 (create). As a result, the domain of operational verbs (KKO) is heavily influenced by the mental process required to solve the provided question (Widana, 2017: 3).

Table. 1 The cognitive domain in Taxonomy of Bloom

Taxonomy Level	**Related Verbs**	**General Description**
1. Knowledge	Remember, recall, identify, recognize	Memorizing facts
	Translate, rephrase, restate,	Explaining in one’s own words

2. Comprehension	interpret, describe, explain	
3. Application	Apply, execute, solve, implement	Solving new problems
4. Analysis	Break down, categorize, distinguish, compare	Breaking into parts and identifying relationship
5. Synthesis	Integrate, organize, relate, combine, construct, design	Combining elements into a whole
6. Evaluation	Judge, assess, value, appraise	Judging quality or worth

(Source: Russell and Peter, 2012:69)

3. Methods

This research is qualitative in nature. Documentation was used to obtain the information. The tryout examination and final test examination of SMAN 5 Purworejo in academic year 2020/2021 were obtained from the English teacher as the source of data. The researcher used the revised Bloom taxonomy theory to assess the English test questions one by one. The researcher divided them into two cognitive ability levels, HOTS and LOTS, and then determined a percentage based on the cognitive levels. The indicators served as a guide for the researcher as he assessed the questions. Each test was analyzed by the researcher using Bloom's Taxonomy and HOTS criteria for developing the principles of questions based on criteria or indicators for formulating the principles of questions. Analyzing, Evaluating, and Creating are the criteria used. After filling in the criteria in the evaluation format, the researcher counted all of the evidence contained in the questions. The data is then assessed by utilizing the table below to calculate the percentage of features of the HOTS type problem based on cognitive, LOT, HOT, levels, critical thinking skills, and problem solving abilities.

Table. 2 Result analysis Blooms Taxonomy

No	Question	Action Verb Indicator	HOTS					
			C1	**C2**	**C3**	**C4**	**C5**	**C6**
1.	*The underlined expression expresses...* *a. Offering something* *b. Offering help* *c. Accepting an offer* *d. Declining an offer* e. *Refusing an offer*	*Explain – Understanding*		√				

C1 = Remembering C4 = Analysing
C2 = Understanding C5 = Evaluating
C3 = Applying C6 = Creating

$$P = \frac{n}{N} \times 100\%$$

Description:

P: the percentage value sought
n: The details about cognitive level analysis results.
N: the number of questions about thefinal test Examination/Tryout

4. Result and Discussion

The analysis was conducted on the SMAN 5 Purworejo tryout and final test examinations in the academic year 2020/2021. The result of the Bloom Taxonomy's suitability of the level of cognition set has been obtained.

Table. 3 Bloom cognitive levels contained in the questions

Source	Number of the Questions	Bloom's cognitive taxonomic level					
		C1	**C2**	**C3**	**C4**	**C5**	**C6**
Final school examination	35	13	17	2	3	-	-
Tryout	30	5	17	5	0	1	2

35 questions with details of cognitive levels can be found based on the data above regarding Bloom's taxonomy of cognitive levels from final test questions. The final test questions did not discover the Evaluating (C4) and Creating (C5) levels, with 13 items (37%) remembered, 17 items (48%) understood, 2 items (6%) applied, and 3 items (9%) analyzed. Based on these findings, the degree of understanding (C2) and remembering (C1) dominate the final test, which are essentially still included in the Low order thinking skill, which should not be included in the final test since higher order thinking abilities should be prioritized.

Table. 3 The percentage of the comparison of HOTS of tryout and Final school examination questions of SMAN 5 Purworejo

Category	Final school Examinations	Percentage	Tryout	Percentage
HOTS	3	9%	3	10%
LOTS	32	91%	27	90%
TOTAL	**35**	**100%**	**30**	**100%**

Table 2 demonstrates that the percentage of HOTS questions on tryouts is higher than on final school examinations, due to a variety of circumstances, one of which is the fact that there are fewer tryouts than on final school examinations. Although there are fewer test questions, there are more types of cognitive levels. When compared to the final school examination questions, which only identified higher order thinking skills at the cognitive analyzing level, the tryout questions have cognitive levels of Evaluating (C5) and Creating (C6) (C4). Example of final school examination questions and tryout questions in the terms of thinking process.

(1) Remembering C1

i. Final school Examinations Question (Item 18)

Banjar Restaurant opens..

A. every day
B. every evening
C. Sunday to Friday
D. every Saturday evening
E. every Saturday from 18.00 to 21.30

ii. Tryout Question (Item 20)

Q : Mr. Blue lives in the blue house. Mr. Pink lives in the pink house, and Mr. Brown lives in the brown house. Who lives in the white house ?

A. The Prince
B. The President
C. The Princess
D. The Queen
E. The King

iii. Final school Examination Questions (Item 24)

How many classes are offered by Coley Language Conversation club ?

A. 5
B. 6

C. 7
D. 8
E. 9

iv. Tryout question (Item 17)

What did the writer learn in the Maratua Island?

A. Littering can endanger sea creatures.
B. We should save three-legged turtles from extinction.
C. Sea creatures depend on human beings for their survival.
D. Maratua Island is the best habitat for three-legged turtles.
E. Save Maratua Island, and you will save the three-legged turtles.

v. Tryout question (Item 18)
Which one of the following statements is RIGHT based on the text above?
A. The visitors can possibly see the animals in their cages
B. The visitors of Taman safari are more in common days.
C. There are a few kinds of animals around the world there.
D. It's sufficient to enjoy seeing all the animals inside a car.
E. The knowledge of wild animals are impossibly found there.
Tryout question (Item 19)

vi. <u>All that glitters is not gold</u>.
The meaning of the proverb is.....
A. A satisfactory conclusion makes up for earlier disappointments.
B. Be blunt and say plainly what you mean.
C. Everything that is attractive on the outside may not be relly valuable inside.
D. Family ties are stronger than other relationships
E. *People with similar interests and tastes tend to group*.

The fundamental concept of this section is just to find or recollect what has been mentioned previously, such as remembering or mentioning the names of four, names of persons, descriptions of time, and several other things. This degree of remembering is included in low order cognitive skills. Students are asked to recollect the passage of time that was previously explained in question number 18 of the final examination questions.

In tryout question number 17, students were asked to find out what the main character in the The reading text is already provided for the solution, as is the story. The verb Who appears in question number 20, which is synonymous with the cognitive level of remembering, because this level of remembering essentially merely repeats the information included in the question. Students just need to repeat the information on the number of things asked in question number 24. Students are expected to recall material from the previous text and conclude a statement that is consistent with the reading text in question number 18. The easiest level is the remembering level (C1), because students may directly get the answer by reading/re-examining what is written in the reading text or the question itself.

5. Conclusion

In the academic year 2020/2021, the composition of the cognitive level of higher order thinking skill of tryout and final school examination questions at SMAN 5 Purworejo includes There are six levels at this cognitive level, which are separated into Bloom's Taxonomy's Higher order thinking and low order thinking abilities domains, ranging from low to high, namely: Remembering (C1), Understanding (C2), Applying (C3), and Analyzing (C4) (C3). Creating (C4), Evaluating (C5), and (C6). 35 questions with specifics about cognitive levels were found in the final school examination questions. In the final school examination questions, remembering 13 items (37 percent), understanding 17 items (48 percent), applying 2 items (6%), and analyzing 3 items (9%), The levels of evaluating (C4) and creating (C5) were not discovered. Meanwhile, the most dominating level in tryout questions is the understanding level (C2). There are 30 written questions with taxonomic levels in the tryout questions. Remembering 5 items (17%), Understanding 17 items (51%), Applying 5 items (17%), Evaluating 1 item (5%), and Creating 2 items (7%), which suggests that low order thinking skills are used in 90% of the remaining questionsThe higher order thinking skills questions in final examinations and tryout questions are identical; both have three higher order thinking skills questions.

Examining school final examinations, researchers discovered three things on the analyze levels (C4), one item on the Evaluate level (C5), and two items on the Create level (C6).

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