



Analysis of HOTS Problem Physics of Electrical Static in MA Darussalam Bengkulu City

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Abstract: This research aims to describe some of the results of the analysis of UN, USBN, and UAS based on IndikatoL HOTS and LOTS, knowing how it is developed and how the results of HOTS and LOTS capabilities participants Students at school. As for this type of research that is an observation with the teacher of physic subjects. The subject of this study was a grade XII-MIPA student in the MA Darussalam City of Bengkulu. The results of this observation showed that the percentage of the problem of UN, USBN and UAS class XII Physics MA school year 2017-2018 in the review of Taksanomi bloom in the revised analysis (C4) in a succession of 86%. 86% and 100%. While the level of evaluating (C-5) is in a row of 14%. 14% and 0%. Problems that have been tested consist of two questions lower-order thinking skills (LOTS) with a percentage of 14.3% and 12 problems HOTS with the problem according to the revision of Bloom's taxonomy is 55.3% level analyze and 21.4% level evaluates. Quality problems in the. Researchers can conclude that the problem of UN, USBN, and UAS who are in the field today is still relatively low to measure HOTS and problems developed today are enough to have good quality and worth using.

Keywords: HOTS, Electrical Static, UN; USBN; UAS

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INTRODUCTION

Indonesia has a purpose that has been formulated since the year 1945, which is educate the life of the nation. Nowadays, education is the main need for everyone to prepare qualified human resources. Education is the process of maturation of quality of life directed at the establishment of superior personality by pressing the process of maturation of logic quality, heart, morality, and Faith (Mulyasana, 2011)

In the Distrutip Era, Indonesia needs intelligent, agile, critical and rational thinking. The development of education will also grow rapidly. To make human resources in Indonesia can develop with better quality. Thus the successor of the nation needs human resources that have the ability to be able to analyze, evaluate, and create solutions from existing allergens.

The low level of thinking habits taught to students causes no high level of thought. It should think a high level is necessary to solve the problems creatively and innovative to overcome the problem, then the students are directed to develop a high level of thinking. In the context of physics development, students need to be used to use high level thinking.

High-level thinking skills are one of the approaches in learning where learners are taught to think critically, logically, reflective, metacognitive, and creative thinking. All students are able to think, but most of them need to be encouraged, taught, and assisted to think high levels.

Educational objectives that can be achieved one of them by going through teaching activities in school. The teaching and learning activities need to be also balanced with the implementation of the curriculum. In Indonesia has now applied the curriculum 2013 revision 2017 integrating the strengthening of education that has character in the learning include religious, nationalist, independent, mutual assistance and integration. It also integrates skills in the XX1 century or the term 4C (creative, critical thinking, Communicative and colaborative) and high level thinking skills (kemendikbud. 2016). Teaching and learning activities also require the assessment to know how the level of understanding and success of learners.

According to Bloom's taxonomy that has revised the thinking skills in distinguish into two levels, i.e. low Order Thinking Skill (LOTS) and high-level thinking skills (LOTS). Speaking of thinking skills, the bloom taxonomy is considered as the basis for high-level skills, this thinking is based that some types of learning require a process of cognition more than others but have more benefits to the general. Logical, reflective, metacognitive, and creative thinking. All students are able to think, but most of them need to be encouraged, taught, and assisted to think high levels. (Brookhart, 2010).

Based on the bloom taxonomy, there are aspects in the cognitive realm that are part of low level thinking skills and high level thinking. The low level of thinking is to remember (C1), Understand (C2), apply (C3) while the three aspects of thinking high level is the aspect of analyzing (C4), aspect of evaluating (C5), creating aspect (C6).

Today's physics have become one of the difficult things students can achieve, it is visible from the value of the physical subjects that are always less satisfactory. Physics are also considered difficult because they require understanding of concepts, and mathematical reasoning. In learning physics, the activity of students is indispensable. Activity in learning physics is in two respects, namely active in action

(hands activity) and thinking (minds activity). In the curriculum 2013 began to develop problems of type HOTS. In the USBN and UAS in 2018 the Schreiber has realized the problems of HOTS to SMA/MA students equal. However, there are still many difficulties felt by the student.

The factors that cause student learning difficulties can be internal factors originating from within the concerned and the external factors originating from outside of the concerned. Students' mastery of physics in high School (SMA) is still problematic and problems are different. For this reason, researchers find it very important to do research on the difficulty factors of learning physics in high School (SMA) students in the city of Bengkulu.

METHOD

There are two types in this research (1) to be able to calculate and analyze the percentage of HOTS UN, USBN, and UAS using a qualitative description (2) The development of HOTS problem on the electrical topic, with the type of research using the ADDIE model. The instrument consists of (1) Collecting problems of UN, USBN and UAS. (2) Analyze to be categorized into questions based on the HOTS indicator. (3) Validation sheet to know the quality of problem and (4) Assessment Instrument to measure HOTS of learners. In this quantitative descriptive research is done by classify the questions based on the HOTS indicators that have been compiled and then calculate how many percentage of the problem is. The analysis technique of the development data acquisition includes (1) analysis of the quality of the problem in order to be used (2) Analysis of the problem profile to find out how the HOTS in the shell, whether according to the Bloom taxonomy. And (3) analysis of how HOTS learners ability.

RESULT AND DISCUSSION

1. Analysis about UN

In question UN There are 22 items consisting of 40 items of UN Sol Physics in the year 2017-2019 that can be in the problem of HOTS, by having a percentage of 86% about C-4 (analyze) and 14% C-4 (evaluate) according to the taxonomy domain Bloom, the most number of HOTS problems are in a cognitive domain that analyzes the counting indicator. Results of the analysis can be seen in the following Tabel:

Table 1. Result of analysis of UN

UN	Cognitive Domain Indicator							
	C -4					C -5		
	1	2	3	4	5	1	2	3
Amount	1	10	5	2	1	2	0	1
Total	19					3		
Presentase%	86%					14%		

This proves that the problem of UN that is in the national test is not to train the problem-the problem at the level C-5 domain Kongnitif Bloom based taxonomy in revision. The HOTS is divided into 19 domains of the C-4 cognitive domain and 3 items of the C-5 cognitive Domain, based on the revised Taksanomi bloom. This result can strengthen previous researchers by Shahida & Irwandi (2015) about high level thinking skills about the UN year 2011-2012 indicates that the problem-problem UN only represented by the cognitive level of analyzing (C-4) covering the process of Distinguishing and organizing.

2. USBN problem analysis

From the analysis results 35 Butur of the double choice of USBN physics at MA Drussalam of Bengkulu City school year 2017-2018 can be seen in the following table:

Table 2. Analysis of the USBN

UN	Kongnitif Domain Indicator							
	C -4 (Analyse)					C -5 (Evaluate)		
	1	2	3	4	5	1	2	3
Amount	0	9	3	0	0	0	2	0
Total	12					2		
Presentase%	86%					14%		

There are 14 rounds of the USBN physics categorizes in HOTS with the composition of 8 cognitive domain C-4 and 2 -grain cognitive domain C-5 based on the revised Taksanomi bloom. The percentage of the problem consisted of 86% of C-4 (analyzing) and 14% C-5 (evaluate) according to Doomain kongnitif the Bloom taxonomy which was revised. The most HOTS problem is in a cognitive domain analyzing with counting indicator based on image/series/graphic/data analysis of the table. About USBN in the city of Bengkulu is less training on the problem-the level of C-5 is in the main kongnitif based on the revision of Taksanomi bloom. And on this problem HOTS are divided into 19 domains of kongnitif C-4 and 3 rounds of the C-5 cognitive domain based on the revised Taksanomi bloom. In this case the USBN can be made a basic reference to develop a problem according to the material-material that is tested both at school level and national level. Suehandro (2006). Stated that "in order to realize the vision and mission of national education, in need of a basic reference by each organizer and unit of education which among other things include criteria and criteria is minimal of various aspects related to Education."

3. Analysis of UAS

Problems from the details of a question of UAS MA Darussalam that has been in the analysis can be adjusted with the indicator of each domain cognitive based on the revised Taksanomi bloom. As for the type of UAS problem in the analysis of the problems that have been in accordance with the indicator HOTS. About UAS MA Darussalam more domains cover the domain kongnitif C-4 Taksanomi Bloom that has been revised using an indicator concluded the results of the analysis of Images/series/charts/tables. From these results can prove that the problem-problem UAS that are used in the school there are already in the problem As for the problem-problem

UAS that have been related to HOTS domain kognitif C-4 and less train about the domain kognitif C-5 well. Therefore the problem of UAS also still need to be upgraded again in order to test levels C-5 and C-6. Because it is basically the problem that is already in the field still many are still at the level of low thinking. As for the one expressed by Poppy (2011) stating that the problem-the problem is more likely to test the memory aspect.

4. Students' Higher Order Thinking Skills Ability

The questions that were tested amounted to 14 items consisting of 9 items developed and 5 items of UN, USBN, and UAS. The questions tested consisted of 2 LOTS questions with a percentage of 14.3% and 12 HOTS questions where HOTS questions had included 9 C-4 cognitive domain questions with a percentage of 64.3% and 3 C-5 cognitive domain questions with a percentage of 21.4%. The cognitive domain of analyzing (C-4) is one of the abilities that distinguish, organize, and guess the intent of the core of a problem. While the ability to evaluate (C-5) includes the ability to predict the effectiveness of procedures and the ability to justify results or operations based on certain criteria and standards (Anderson & Krathwohl, 2001).

CLONCUSION

The results of this research among others: (1) The percentage of UN Physics High school year lessons 2016-2017 was reviewed from a revised cognitive domain taxonomy of Bloom analyzing (C-4) by 86% and evaluating (C-5) by 14%. The percentage of the USBN problem in SMA physics year 2017-2018 was reviewed from a revised cognitive domain taxonomy of Bloom analyzing (C-4) by 86% and evaluating (C-5) by 14%. Then, the percentage of a problem of UAS class XI physics School year lesson 2017-2018 reviewed from the cognitive taxonomy domain of the revised Bloom (C-4) by 100%. This research aims to describe some of the results of the analysis of UN, USBN, and UAS based on Indikatol HOTS and LOTS, knowing how it is developed and how the results of HOTS and LOTS capabilities participant students at school. This type of research is an observation with the teacher of physical subjects. The subject of this study was a grade XII-MIPA student in the MA Darussalam City of Bengkulu.

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